The Builder.

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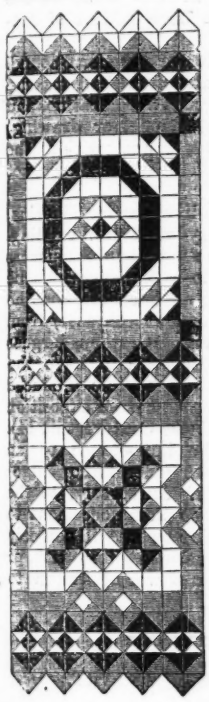


The Arsenal of Philo, according to the Original Specification.

ONE of the longest and best-preserved inscriptions, dating from the great age of Greece, which have been discovered at Athens has an architectural as well as historical interest, which commends it to notice in something more than a paragraph of an architectural journal. It is the specification for the construction of a building of considerable celebrity, and frequently mentioned by classical authors,—by Cicero, Vitruvius, Strabo, Appian Plutarch, and others,—an arsenal at the Athenian port of Piræus, for the storage of hanging-gear, sails, cordage, tackle, &c., of the national fleet. The document, engraved on a slab of the marble of Mount Hymettus, contains as many as ninety-seven lines, in which only eight letters are in any degree uncertain. In terms it is an agreement between Euthydomus, who apparently is the public surveyor, and the architect Philo, son of Execestides, of the deme or parish Eleusis. These few words dispose of the supposition previously current, that the architect of the arsenal was not an Athenian at all, but the Philo of Byzantium who, about the middle of the third century B.C., wrote works on the mechanical appliances of warfare, of which some remains are extant. Vitruvius (Praef. vii. 12) states that Philo wrote an account of his arsenal, as well as on the symmetries of sacred edifices. The inscription, no doubt, embodies the details of plan, construction, and arrangement, as conceived by him. It dates from about the year 346 B.C. The work was then decided on, and it was in progress when the war with Philip of Macedon (339-8) caused an interruption. The interruption was ominous. Athens never was destined to recover the ancient naval supremacy which could still be dreamed of by enthusiastic patriots like Demosthenes when the work began, and few years were to elapse before her fleet was to be at the disposal of Alexander the Great. Philo's arsenal, however, remained a conspicuous and renowned monument of the former power and aspirations of the Athenians, until Sylla gave it to the flames, when he captured the city after a strenuous resistance, in the Mithridatic war.

It is not known in what precise spot the slab was dug up; the searchers for antiquities in Greece make a point of keeping such secrets very jealously; the knowledge of the locality might have helped to settle some topographical difficulties respecting the ancient ports and the situation of the structure. The slab is now the property of M. Meletopoulos, who has published the text, accompanied by a photograph of the original. It has also been published, with comments, by the French Academy at Athens, and more recently in the American Journal of Philology of the Johns Hopkins University. We have already had occasion to recognise and welcome the well-directed and truly scholarly zeal with which classical archæology is being pursued in the United States.

The arsenal was erected for a purely utilitarian purpose, and the specification, in consequence, does not admit us into any of those recondite principles of design with which Athenian architectural genius has been reasonably credited. Moreover, it deals in general terms which had to be supplemented by instructions direct from the architect, and by the guidance which he was to provide in the form of what is called a *paradeigma*, which may include drawings, models of parts more or less extensive, templates, and so forth. The general drift of the agreement indicates a purpose on the part of the designer to avoid all refinements that would involve complication, and to reduce dimensions to the very simplest commensurabilities. For the construction itself, perhaps what will seem most surprising is an apparent cumbrousness of timber construction, far beyond the necessities of the case or the advantage in any gain of strength.

As the Greek foot only exceeded the English by a small fraction (1·013 : 1·0), it is not necessary to reduce the dimensions to our standard. The subdivision of the foot was into four palms or sixteen (finger-breadths) dactyls.

After a partly obliterated religious formula, equivalent to "In the name of God, Amen," the document proceeds to business. The building was to be an oblong of 400 ft. in length, with a breadth of 55 ft.

On the indicated site, closely adjoining the ship houses under a common roof, the ground was to be cut down 3 ft. at the highest part, and a smoothed and level bed formed for the foundation upon solid ground. A foundation is to be formed, 4 ft. thick, with stones laid crosswise. This can scarcely be intended to apply to the entire area uniformly. In the temple of Apollo Smintheus, in Asia Minor, the pavement of the cella was laid upon cross walls with filled-in squares intermediate.

The walls are to be constructed of Peiraic stone, which could be quarried at hand; a first or guiding course (*euthynteria*) for the walls was to be of stones 4 ft. long, 1 ft. 6 in. thick, and 3 ft. broad, but those at the angles were to have an additional length of 9 in.

On the mid line of this course were to be set the *orthostatæ*, that is, the course of stones of greater height than the ordinary courses above them, according to the Greek treatment of the lowest course of the proper elevation, of which there are abundant examples. The *orthostatæ* stones were to measure 4 ft. long, 3 ft. high, and 2 ft. 6 in. and 1 dactyl broad, giving a projection of the odd dactyl beyond the courses above, which were exactly 2 ft. 6 in. broad, only half the height, 1 ft. 6 in., but the same length, 4 ft. A difference in the length of the stones at the angles was to be made with reference to bringing a joint under the second triglyph of the frieze. No dimension or other detail is given for the triglyph.

The height of the wall from the bed-line of the *orthostatæ*, and including the triglyph, but not the cornice which was to run round the building, is to be 27 ft. If we deduct the 3 ft. of the high course, the 24 ft. remaining are exactly commensurate with the height of sixteen courses of 1 ft. 6 in, which makes it probable that the height of the triglyph was an exact multiple of the height of the wall stones.

The interior was to be divided lengthways by two rows of columns, thirty-five in each, at a distance of 15 ft. from the side walls, the column included. There was thus a clear central avenue of 20 ft. through the Arsenal, which is specified as "for the people" (the *demus*), by which it seems that we must understand whatever persons might have only occasional business on the premises, as distinguished from those who had the permanent care of the stores. It is called a thoroughfare in another paragraph, but that it was an open thoroughfare like the nave of old St. Paul's is out of the question.

At both ends of the building, and, indeed, of this central avenue, were to be two doorways, each 9 ft. wide and 15 ft. 6 in. high; one on each side of a *metopon*, a pier or a division, 2 ft. broad, against which the doors, which were to be covered with bronze exteriorly, closed. This division, with the joint breadth of the doors, makes up the 20 ft. of the central avenue. The division was to be continued 10 ft. inward as a wall, but how much higher than the door does not directly appear. Other walls on either side against which the doors would open were to be continued at right angles to the front as far as the first columns, which might thus appear to be engaged, but for inconsistency with some other notices of arrangement.

The two vestibules or lobbies formed by these three walls, and which, for anything that appears, were open to the interior, were to have an independent ceiling of Hymetic stone above the doors, which may be taken to imply that the walls were not to be carried up to the height of the columns.

The height of the doors being 15 ft. 6 in. gives a proportion somewhat exceeding 5 : 3 of breadth; the sills were to be of Hymettic stone, door-cases of Pentelic or Hymettic; the archi-

trave (*hypertonaion*) or lintel of Pentelic, 12 ft. long, equal in breadth to the walls, and of two courses in height; the cornice above the lintel to project 1 ft. 6 in. The columns are directed to be set on a stylobate, of which the stones are to be 4 ft. long, 3 ft. 3 in. broad, and 1 ft. 6 in. thick; this thickness is that of the course of *euthynteria*, with which ("level with which at top" seems to interpret the Greek) it is specified that they are to range.

The whole of the interior was to be paved with stones closely fitted and worked smooth and level on the upper surface. No thickness is given for these slabs, but it must have been much less than that of the stylobate, which is 1 ft. 6 in. This stylobate, therefore, probably formed a step from the lower level of the central avenue; but it seems probable that the pavement of the aisles was level at once with the upper surface of the stylobate, which ranged with the bed-line of the *orthostatæ* on the side walls. This, however, is but a conjecture, and the pavement of the aisles may have been at the same level as that of the central avenue,—a step from the stylobate.

The lower diameter of the column is to be 2 ft. 9 in., which allows a margin of 3 in. on either margin of the stylobate. They were to be constructed of seven drums of Hymettic stone of 4 ft. each, except the lowest, which is to be 5 ft. high. The capitals, of the style of which nothing is said, are to be of Pentelic marble, and as the total height of the column is to be 30 ft., their height would be exactly 1 ft. The absence of any notice as to a base would imply that the columns were of the Doric type, though they would be unusually slender even for the Ionic, namely, within a tenth of 11 diameters. Epistylia of timber are to be set on the columns (that is, beams in position of an architrave) 2 ft. 6 in. wide, and 2 ft. 3 in. high; and of these there were to be eighteen to each row of columns, and fastened to them; the word used does not explain in what manner.

These epistylia would extend across two columniations, and if all the eighteen were of the same length, the number of intervals so covered would be thirty-six; this implies thirty-seven supports, and in consequence we have to include as intervals equivalent to intercolumns the spaces from the end columns of each row of thirty-five, to the end walls of the building to right and left of the doorways.

Assuming this terminal interval to be an average intercolumn, we have to divide the length of the interior 400 ft. less the joint thickness of the end walls, among 36 columniations less one diameter. The calculation brings out a dimension from centre to centre of lateral column of 11·04. (Add one diameter of column to 395=397·75 and divide by 36=11·04 from centre to centre of lateral columns.)

The transverse measurement, therefore, from centre to centre of columns across the central avenue a little exceeds a double columniation. The walls were to be pierced with windows all round answering to the intercolumnar spaces (*metakionion*, intercolumn), and there were to be three windows at each end. The windows, which are to be fitted with bronze shutters, are to be 3 ft. high and 2 ft. broad. Nothing is stated as to their height from the pavement, for which, therefore, we are thrown on general inferences.

The walls at the end of the aisles measure only 10 ft. in the clear between the outer and the dividing walls, and a single window would be sufficient for each of these; the third must necessarily be central and over the doors, in fact, over the central pier. But it would be useless and, indeed, impracticable here, unless it could admit light to a space above the ceiling of Hymettic stone which covered the two vestibules. This may be interpreted as proof that the stone roof of the lobbies was not much higher than the cornice of the door, say 20 ft., and the sills of the windows on the flanks may have ranged at 20 ft. above the floor. The building was to be finished exteriorly with a pediment at each end with a proper cornice; this, at least, seems the meaning of one of those new words which this inscription adds to the Greek lexicon. A cornice is to be set over the frieze of triglyphs on the flanks of the building, but whether continued as usual horizontally across the fronts is not specified.

Tie-beams equal in scantling to the epistylia are to extend across the central thoroughfare or avenue (*diodos*) and rest on the columns; these beams are called *mesomnai*, and we thus obtain the exact meaning of a word which Homer employs in the palace of Ulysses and elsewhere, and which, even within this last year, has been disputed over by the grammarians. These two beams add a height of 4 ft. 6 in. above the column, unless so far as they might be notched into each other to a small extent, and make up 34 ft. 6 in. above the bed of the *orthostatæ* and, it is important to remark, 7 ft. 6 in. above the bed of the cornice of the flank walls.

Nothing is said of how the upper beam is to be fastened to the lower, but there is an expression used with reference to the fixing of the lower, which seems to make it dependent on the beam above it, and otherwise is hard to translate intelligibly; this expression may possibly imply that a tenon passed through both to the capital of the column. The word used for the process of fixing, taken literally, means "glueing," which is a process as inapplicable here for securing the two beams to each other as one of them to the marble capital.

A king-post (*hypothema*) is to be placed on the tie or cross beam 3 ft. high and 1 ft. 6 in. thick either way; the beam being 2 ft. 6 in. wide there would be a margin of 6 in. on either side of the post.

On these king-posts are to rest the principal rafters, called *coryphaia*,—literally headers,—a new and technical use of the word. These are to be 1 ft. 9 in. wide, a width which is in excess of the breadth of the king-post, and gives a projection of 0·125 on either side.

Nothing is said of a ridge-piece or any special and direct connexion of the line of king-posts with each other upon the axis of the building.

The height of these rafters is given as 1 ft. 4½ in. "without the slope"; meaning apparently that the dimension is to be understood as measured at right angles to the edges of the rafter, and not on the vertical line when it was in position.

These principals then rested further on the tie-beams, and were fixed to them with pins (*kerkides*); we have to infer that this was immediately over the columns, and that they passed on thence to take bearing finally on the course of stones which formed the cornice on the top of the flank wall.

Purlins were to be fixed on these transversely at 1 ft. 3 in. apart; these were to be 7½ in. thick and 11¼ in. wide, or half as wide again as thick. They are called *sphekiskoi*, a word which, as usually employed, means wood pointed like a wasp's sting; this application of it seems due to the angle which the purlin made with the rafters, but the analogy is not very obvious.

The purlins were to be crossed again in due order by the *imantes*,—"straps or braces,"—equivalent to common rafters, set at interval of four dactyls or finger-breadths,—that is, at 3 in. Their dimensions are given as 6 in. wide and 1½ in. thick.

Then follow the (*calummata*) covering laths or battens, for which no interval is specified, ¾ in. thick and 4½ in. wide, to be nailed down with iron nails. When these have been *coated* the roofing is to be completed with Corinthian tiles set close to each other. The name given to these *calummata* seems to imply that, narrow as they were, they were set close together, and this seems necessary from what follows.

What *coating* is meant is left here utterly uncertain; even the verb which is employed is unknown to the lexicons, but there can be little doubt that it is allied to one which has reference to a skin. The particular meaning of applying a coating is ascertained by another inscription which employs it to describe what would serve some purposes of a ceiling, namely, a layer of clay, or perhaps plaster, three dactyls (2¼ in.) thick. Such a layer would cover up the ¾ in. *calummata* in this instance, and interfere with the tiling; it seems that we must assume a thinner coating of whatever nature.

The fittings for the storage of tackle and hanging gear, the main purpose of the building, were confined to the lateral divisions, between the lines of columns and the flank walls. We may suppose that the broad central nave was made use of for the many various operations connected with the process of completing the rig of a vessel for service.

Each intercolumn (*metastulion*) was to be fenced off by two *orthostatæ*, stones which, however, were only to be 3 ft. high, with an interval closed by a latticed gate (a *kinklis*). Stone supports (*parastylia*) were to be set against the columns within. The height of these is not specified, but beams, 1 ft. high and 1 ft. 3 in. wide, were to be laid from them to the side walls, and inserted into these to the extent of 9 in. Joists, 9 in. wide and 6 in. high, were to be laid on these, with such intervals that seven of them provided for the entire space from wall to column. On these, again, were to be laid floor-boards, closed up and fastened, 1½ in. thick and 3 ft. wide. In consequence of the height of this intermediate floor not being specified we obtain from it no information of the relation of the windows to the interior.

The inscription enters into further detail of shelves, or what seem to be such, racks and chests for stowage of sails and cordage, but these particulars can only be reconciled with each other and made clear by an amount of minute analysis of the text and general discussion, that must be dispensed with here.

The last clauses of the inscription direct that for the sake of coolness in the arsenal such intervals are to be left between joints of the wall-stones, as the architect shall direct. This instruction may, perhaps, account for certain openings of the kind in the walls of the Erechtheum, which have been matter of considerable controversy.

The conclusion has a very modern sound. "All these things the contractors shall execute in accordance with the agreed specification, and the pattern (*paradeigma*,—model or drawing) delivered by the architect, and within the assigned periods in which they may contract for the several works."

Valerius Maximus, who lived under Tiberius, speaks of Philo's armoury as if still existing, and to be admired both for its sumptuousness and elegance; but this is a blunder which he added in freely re-writing an anecdote that he took, as proved by coincident phrases, from Cicero, who knew better. Oratory, argues Cicero, and not architecture, is to have the chief credit for the effect which Philo produced in the assembly of Athenians, by the exposition of his design for an arsenal (De Oratore, vii., 14). Cicero is arguing for the importance to an orator of specific as well as general knowledge; his lesson comes home, if conversely, to the architect, who may have so many occasions to experience that his artistic powers will scarcely get fair play unless he is also gifted with, or has acquired, like Philo, a power of speech to explain himself.

"IMPRESSIONISM" IN ART.

IT is a curious phenomenon, illustrative of the rapidity with which artistic tastes change in the present day, and the want of any fixed convictions among one section at least of artists and the public, that we have seen within the space of about thirty years or less an oscillation of the artistic pendulum from the extreme of hardness and minute realism once called pre-Raffaellitism, to the other extreme of almost absolute and conscious neglect of detail and realism. It is true that it is in France that the latter taste has shown itself in the most pronounced manner, and there alone that, so far, the producers of this class of art have taken to themselves, or had bestowed upon them, a special classification by name. But though we have in England hardly any artists, with the exception of Mr. Whistler, who go to the length of the French impressionists (for some of the most advanced painters of this class who have English names are artistically French in education), and though we have not among us a specially denominated class or brotherhood like the original pre-Raffaellites, there are now a considerable number of English artists, chiefly landscape-painters, whose system is more or less that of impressionism, and who have a large and increasing following. A singular retrospective light is thrown upon the pre-Raffaellite movement by the fact that the French impressionists, ostensibly so-called, and the English artists who tacitly adopt more or less the same standpoint, form a clique, a select party, regarded with puzzlement and dislike by the average public, and with great self-satisfaction by themselves; occupying just the same relation in regard to the main body of artists working in ordinary grooves, and to the average public, which was formerly occupied by the pre-Raffaellites, although their artistic practice is almost precisely the reverse. This fact suggests the idea that in both cases the moving spring which called the separate artistic clique into being was not only a conviction that the ordinary principles and practice of painting

were in an unsatisfactory state (which the pre-Raffaellites honestly did think, and not without reason), but a desire to gain a certain distinction by going out of a groove, by doing things differently from any one else, and thus posing as a kind of artistic aristocracy, or body of artistic saints, let us say, set apart from the ordinary world. And this view of the matter has been often unconsciously supported by the public voice. After the first development of pre-Raffaellitism had been a little softened away, and its hard edges worn down, average exhibition-goers seemed to have an idea that whatever picture struck them as *hors la ligne* they were justified in stigmatising as "a pre-Raffaellite sort of thing," a piece of Philistine criticism which we have not unfrequently heard.

It is a somewhat important question how far impressionism involves a justifiable or a wholesome view of the function of art; of painting in particular. And in the first place, in what does it essentially consist? In its less extravagant form, it is, in fact, the system which has been pursued by one or two of our greatest landscape-painters; that of aiming at broad effect rather than multiplicity of detail. In this sense Constable was an impressionist; and, indeed, he is so obviously the original suggester of many characteristics of the modern French landscape school from which impressionism developed, that the extreme development of it even, in France, may be said perhaps to be lineally descended from him. As practised by Constable, and by Dupré and Corot, the system meant really, as it seems to us, an attempt to give more life and air to landscape-painting by omitting from the scene details which, in their genuine multiplicity, were beyond the power of the artist to reproduce realistically, and to some extent beyond the power of the eye to take in when looking at Nature herself. This is the practical side of it; the attempt to give, in a sense, intense realism, at least intense feeling, to landscape-painting by renouncing the attempt to paint an impossible multiplicity of details, and concentrating the attention on the main incidents of the composition, colour, and perspective of the landscape. In some instances we see one class of phenomena omitted or passed over in order to give greater force by emphasising another and perhaps more important class, or one which interests the painter more. Thus we have sea-painting, from one well-known painter especially, in which the artist seems to have voluntarily relinquished the attempt to convey realism of colour and surface of sea-water, in order to be free to represent its movement with more power and effect. In another case we see frequently the movement of the sea rather avoided, calm seas with sunlight sleeping over them selected as the favoured subject, because the object is realism of light and colour. Most readers will recognise the works alluded to, and almost every one will have heard criticisms on the foaming seas of the first-named artist as unnaturally cold and grey; but the expression of cruelty in a tempestuous sea is thereby intensified, and that was probably what the painter was aiming at. Corot, again, was evidently greatly in love with the delicate appearance of the maze of thin twigs and young leaves seen against the sky in spring time trees, a delicacy and multiplicity almost if not quite beyond the power of the most patient painter to reproduce with fidelity; and he has attempted to represent this by a thin misty maze of pigment, formless when looked close into, but which at the right distance conveys sufficiently, and certainly with great delicacy, the effect of the maze of minute interlacings which forms the actual fact of the tree-forms at this time of year. In this, his favourite effect, though he did not sink into a mannerist by confining himself to it, Corot shows in a marked manner the theory or principle which is at the bottom of the ultra-impressionist school, of which he was in all probability, without knowing or intending it, one of the suggesters. That theory, when carried to its utmost limits, is that the object of painting is to give the impression which the eye gets in one glance; almost, one might perhaps say, the mental rather than the physical impression; to flash the scene before the spectator as he sees it on turning his head momentarily towards a landscape.

We refer to landscape, because it is this branch of painting on which impressionist ideas have most obtruded. Turner, certainly, introduced into his landscapes what might be called impressionist figures, for they are often nothing more than that; but then his object was not to paint figures, and he wished such figures as he introduced or indicated to be subordinate to the landscape. No one has ventured to put forth "impressions" of figures,—smudges to convey the general idea of a figure just caught in passing,—as principal subjects in a painting. Mr. Whistler's large figure pictures, which may occur to some as instances, in almost all cases show clear and definite indication of the drawing of the figure, though the colouring may not recommend itself to us. But it seems to be assumed that landscape can, with advantage, be represented by splashes; an expanse of green paint, the right colour, but textureless and void of detail, to give the impression of a lawn or field, and so on. One thing must at least be admitted, that in that case the picture can only be viewed under the same conditions as it is supposed to represent the landscape,—in a momentary and half careless glance. Continue the scrutiny, and the lack of detail will force itself painfully on the eye, and the very method which was intended in the first instance to escape from materialism and to give the spirit only of the landscape, will, on closer inspection, seem only a grosser materialism than a realistic painting, having no illusive likeness to nature at all, presenting only an expanse of paint,—

"Merely that, and nothing more."

Of the two extremes of style in landscape-painting, this one seems to us more wrong and mistaken, and of less value to art, than the pre-Raffaellite extreme of hard and minute realism. Neither represents the true effect of nature; but the impressionist not only loses this, but gives us none of the detailed facts. The extreme realist over-emphasises these, and loses the aërial perspective and proportion of the scene, the atmospheric effect and what is somewhat vaguely called the poetry of nature; but he at least quickens his and our knowledge and study of the facts of nature, and that is one object, though not the chief object, of the study of landscape-painting. We know one landscape, for instance, by an artist who has now deserted his early tendencies fostered under the "P. B." period, in which sunlight on the distant sea is, indeed, of a painty and very solid nature, no light nor atmospheric gleam about it, but in which the foreground is one on which the beauty of leaves and flowers and the phenomena of their growth, may be studied almost as in nature,—a *tour de force* of brilliant and patient realism such as is in itself of the highest value from a certain point of view, though such work does not include all, or the highest, that landscape art should aim at. Still, it is of value; it represents earnest study, thoughtful, patient, untiring work, great mastery of manipulation; but what does the impressionist's smudge represent? Sleight-of-hand; a trick, little more; the effort to be an artist without incurring the labour of an artist, to conceit himself that he with a sweep of his brush can accomplish that to which others give years of patient study, and then confess that they have far more to learn than they have ever yet learned. There is something almost morally wrong in such an art as that.

No one has ever yet heard of impressionist art in sculpture, though there is no knowing to what we may come, and perhaps it may some day be started as a practical axiom that the intellectual ends of sculpture are attained by roughing-out an impression of a figure in the marble, and omitting the attempt to reduce it to absolute and accurate form. But in architecture there has been, and still is, a good deal of tendency to impressionism at the present day. This is seen in some very large buildings of the modern Gothic type, where there is a studied evasion of rule and symmetry, an aim at the production of a general crowded, irregular, picturesque effect; and a love for this kind of effect is seen too in much architectural drawing of the day, where picturesqueness takes the place of accurate delineation. The distinction here is not so marked as in the case of painting, because there is not the same relation to nature to call attention to the shortcomings of the rougher class of work; but the tendency to study form less closely and thoughtfully, both in drawing and designing, is significant of the same condition of mind in regard to art which leads to the more marked heresy of impressionism in painting. Of course, in all branches of art, "impressions," in the way of sketches for reference, are of use to the artist; not, however, the more useful because they are only impressions, but because impressions, which in many cases are all that there is time to secure, are very much more trustworthy and valuable when committed to paper than to the brain only which latter also acquires a clearer idea of them in the very process of recording them, however roughly, on paper. But to give what are merely such impressions, such sketches, on a larger scale, to the public as art, and even (as is pretended) as a particularly intellectual form of art, is only practising on the possible capacities of a part of the said public for being taken in, or for adopting a theory or system merely because it is "*caviare* to the general," and the adoption of it may be taken to imply a superior judgment on their own part to that of the majority.

THE TWIN ARTS.

IN the last and in the beginning of the present century, as, for example, may be noticed in the writings of Lord Shaftesbury and Prince Hoare, the term "plastic art" was applied to painting as well as sculpture, and what the latter author says in reference to its use in this respect may be interesting. "As to the term plastic art," he remarks, "I have adopted it because although strictly expressing modelling only, it has been rendered familiar to the public ear by modern use as applicable to both painting and sculpture; I have wished in vain to find a simple term which, denoting the art of form, rendered the vehicle of intellectual expression, might be conjointly applied to painting and sculpture."

From the above admitted incompleteness, as void of any notice of colour, this term has not survived, nor has any simple one arisen since to take the mission it aimed at in linking together, under one title, these two arts especially and distinctively by themselves; nor do we attempt to supply it by that which heads these remarks, which, however, are addressed to treat of their close connexion.

As has been before submitted in these columns, it may be but candid and logical to extend the usual triad group of Painting, Sculpture, and Architecture, so as to embrace, as a fourth, Decoration, who, although may-be of lesser stature, is as truly a sister as any of the family. Whether, however, the number three or four be most acceptable, it is a familiar idea, recognised in many ways, that two of these, namely, Painting and Sculpture, have an especially near and dear relationship with each other, insomuch that they might be called twins; and we may add that, like twins, they are rarely so happy as when they are together.

Architecture and Decoration, although they draw their main inspiration from Nature, are far from being so directly imitative of her as these twin arts of Painting and Sculpture, who thus have a unity of aim and character which especially connects them as recipients and exponents of thought and beauty. Duly associated they are thus calculated to produce a far more perfect artistic effect than when banished from each other's presence.

The Houses of Parliament afford some examples of their happy combination which, had a longer life been granted to the Prince Consort, would probably have been accomplished throughout that grand national edifice according to an extensive programme shaped out under his surveillance, including a great number of subjects for painting and sculpture contained in the reports of the Fine Arts Commission, of which, on a former occasion, bearing date of February 14, 1880, we gave lists and details. In harmony with these views, for instance, the wall spaces in St. Stephen's Hall, between the fine marble statues there, might have received frescos or mosaics; as also the spaces vacant on the walls of Westminster Hall, the due divisions of which are indicated by the hammer-beams above, which might have received most appropriately similar paintings of some of the many historical events of which it has been the scene, and of which we have ample records. Some of these were enumerated in our issue of April 17 of the same year, and we are glad to refer to them, as now that the courts of law are removed, it is to be hoped that the due embellishment of this noble hall with mural historical paintings, and statues under the hammer-beams, will receive the consideration of Parliament.

The subject of such permanent homes for the

twin arts is somewhat removed from that of the reception of their productions in exhibitions, which endure but a season, and of which the arrangements are necessarily so hurried that it is impossible to give them sufficient thought to make them altogether satisfactory. Indeed, works of art evoked mainly, in the first place, with the view of their presentation in a temporary exhibition, are under wholly different conditions from those produced as part of a regular plan in which they are to form the illustration and adornment of a grand edifice, in which the twin sisters are called in to permanently assist each other. Our season exhibitions, it is true, may, to a certain extent, afford opportunities for trials of modes for the agreeable co-arrangement of paintings and sculpture, and in this way may lend much aid towards the furtherance of the larger subject, but, from their essentially heterogeneous composition, they can never afford perfect examples of the alliance and combination of the two arts. Whenever, however, by the endeavours and effects there displayed the national taste is conducted to the just conviction that the twin arts should have a common home, they do this great cause much service.

It may be that this subject has been partly kept back by the spirit in this country of division of labour, which while, on the one hand, so beneficial to the development of manufacture, has possibly on the other tended to injure the interests of art. Thus, we meet occasionally with instances of painters who have little regard for sculpture, sculptors who have small respect for painting, and architects who have no substantial love for either, although, fortunately, there are eminent exceptions. This mutual indifference was not the case in Classic or Mediæval times, and thus in those periods painting and sculpture dwelt more closely in union than they have with us in later days. Classic temple-worship even associated them most intimately together on the same object, and painted their statues, although, as has been illustrated on a former occasion, in some remarks on Gibson and the colouring of statues, Nov. 24, 1879, to which we gave our adherence, this practice was the probable outcome of priest-craft, and was not accepted in independent works of the best period even when they represented divinities.

Within our own time, however, there has been an idea that the association of statues, especially in marble, is detrimental to the effect of pictures, inasmuch as freshly-executed marble, especially as seen in season exhibitions, is so white. This objection, however, will be found chiefly to arise from inadequate arrangement, which disappears in competent hands. The whole interior scenic effect of a saloon has to be studied as a picture, and a statue only placed where its tint is required; and, moreover, it is by no means essential, or even desirable, that sculptured work should always be stationed in a strong light.

One difficulty which stands somewhat in the way of associating them intimately in our modern structures, especially in our dwelling-houses, even of the larger class, is that these have been so often constructed wholly apart from the contemplation of such combined enrichment. Walls usually, even without special arrangement, are ready recipients of pictures; but the question of places for sculpture is seldom regarded, which thus finds itself without situations, although in the first construction it would have been easy to have provided niches in the walls, and spaces here and there for works of that art, so as to have been suitable features of architectural enhancement, also forming reliefs to the eye between paintings, so that the latter may be the better contemplated in their individuality. Statues so arranged conduce to the dignity of the pictures they divide without in any way losing their own. In large structures it may be noticed how agreeably statues stand before the main supports of the interior, between which paintings occupy suitable, ample, and isolated situations. There are, however, so many ways in which these conditions are modified by the design and requirements of the structure, that it would inconveniently confine the subject to attempt to set forth in narrow limits rules inevitably open to so much variation.

It is, however, with the architect as organiser that these conditions depend at the outset, as well as in the after details of adjustment of the modes in which the twin arts may be presented most agreeably together. At the same time it is of very great value that the painters and sculptors employed should themselves take a charitable mutual interest in each other's work, unity and harmony of effect being thus the result, by which means sculpture is relieved of isolation and coldness, and painting gains in force and dignity. The comparative merits of the two arts have often been a subject of discussion, but when their sisterly friendship is the object this may well be relinquished to make way for the far more profitable question of the modes in which they may best conduce to each other's benefit.

In the records of art it may be seen that each has done the other great and frequent service, and, as an example, it has been remarked of sculpture by Prince Hoare, in his essay on the arts of design in England, that collaterally "by reason of its durability it has become in process of time, if not the only credible witness of the existence of the sister art, at least the only testimony of her past eminence. Sculpture enjoys the privilege of being the criterion by which are appreciated the reports relative to contemporary painting. If the works of such artists as Praxiteles, Apollodorus, and Agasias had been less eminently deserving of our admiration, we should have been at a loss to judge what degree of credit we ought to give to the accounts transmitted to us by authors respecting Protogenes or Timanthus, Zeuxis or Apelles."

This extract affords an instance in which a grace has been conferred on one sister by the other; but it may well be borne in mind that by her own comprehensive power painting will ever possess a far wider hold on the public mind than sculpture, although the products of the latter may, from the nature of its materials, be the more enduring; for painting presents in one view all the elements of the appearances of nature, of colour as well as form, and is capable of representing in perfection a far more extensive range of subjects. Colour, beautiful colour, with all its infinite gradations which are so attractive in nature, as a science and as a devoted handmaid, belongs to painting alone, and is at the first sight the most alluring and fascinating of all qualities in a picture. It at once, before all others, invites and lays hold of the senses like a charming strain of music before the eye has time to estimate the linear composition or the form; and thus it is that, if the complexion, so to speak, of a painting is delightful, we can forgive almost any shortcomings or even delinquencies in other respects, and such works as possess in the highest degree the charms of colour and tone, as those of Correggio and Rembrandt, retain their hold on us in spite of inaccuracies in drawing, or even occasional ugliness. On the other hand, however beautiful the forms in a picture may be, if the colours are harsh and unpleasing, it is only by an effort that we bring ourselves to do justice to the excellencies they possess in other respects, and even when we recognise them they scarcely yield to us true satisfaction.

Thus, also, it is most desirable in the sister-art that the marble used should be of good tint, even if it be requisite to be a little toned artificially; not, however, so much so as to injure its natural fleshy transparence, and that the bronze employed should be of some agreeable shade. And this point is of high importance, not only in respect of the works of sculpture themselves, but in order that they may readily harmonise with the paintings with which they may be associated, which union cannot be satisfactorily accomplished unless the sculpture as well as the pictures are of good colour. In truth, it is colour even more than form that harmonises compositions of the twin arts, although due dispositions of the latter are also essential to propriety, dignity, and grandeur.

It is to the architect that the painter and sculptor have to look to afford them these and all the opportunities within his resources for the happy combination of their twin arts, and to assist them in consultation with such general forms as the object and design of his structure may appropriately yield, and to call in the aid of their sister decoration to complete the concert of her statelier relatives. Notwithstanding the direct and immediate attractions of painting and sculpture, it may be well borne in mind that architecture is vastly the most essential to the wants of man, and also that without the further enhancement of purely decorative art the effect of the combined achievements of the rest of the family will ever lack finish and perfection.

LADY ARTISTS' EXHIBITIONS, PARIS AND LONDON.

THE exhibition at present open in London, of works by lady artists, offers an instructive contrast to the exhibition of the lady artists now being held in Paris at the Palais de l'Industrie. If at the Paris exhibition there is less than at the London show to remind us of that kind of work we are generally accustomed to meet with from the skilful hands of the lady painter, there is no want of the real strength which, combined with delicacy, constitutes so great an element in the work of the true artist. It is precisely this delicacy of touch and refinement of fancy, with well-governed force and power, that we like to believe we may some day see in the work of the lady painters; and if we say we should like to see it, we do not imply that lady artists in no instance have either yet reached this point, or have succeeded in effecting the happy association of delicacy and power, but we cannot say that they as yet have altogether emancipated themselves from the teachings of masters whose methods and whose traditions have not allowed for a very probable difference in the artistic capabilities of the ladies.

At the ladies' exhibition in London there is no instance, if we except Mrs. Jopling's portrait of a lady, of an attempt to rival the male painters, such as is to be found in the Paris show, where, if it were not for the announcement that the works are entirely by ladies, one would believe that the pictures were altogether the work of the ordinary exhibitors at the annual *Salon*.

The lady artists of London have, at least, the advantage of numbers over their sisters in Paris, who have shown much more care not only in the selection of their pictures, but in the placing of those accepted. In no instance, as in London, do they consent to hang in the same room water-colours and oil pictures, and there can be no question that in the graceful arrangement of their rooms the French ladies have added a charm to their exhibition which, in the London show, is singularly deficient. One point, however, the English ladies appear to have scored in advance of their French sisters; they seem to have considered with more care the sort of pictures that the public desire to purchase,—at least, it is quite certain that it is easier to find in the English than in the French exhibitions some attractive picture that will remind the sentimentalists, at all events, of scenes of distant travel in Italy and France, or of some quiet running stream or woodside road, some incident of travel, or conventional love-scene, some pretty large-eyed damsel or baby-faced child, some evening effect feebly suggestive of Mason or Walker, or some reminiscence of Miss Kate Greenaway's happy thoughts,—pictures generally, in fact, of a kind that young housekeepers believe will adorn their pretty little quarters. The sales at the private view in Great Marlborough-street were larger on the present occasion than usual. Miss Rayner, Miss Montalba, Mrs. Marrable, Mrs. Cooper, Miss Alice Manly, Mrs. Naftel, Miss Spiers, Miss Edith Marrable, and other old favourites here whose works we did not see in the crowd of a private view, contribute freely as usual, and Mrs. E. M. Ward strengthens the collection with her name.

At neither the Paris nor the London exhibition do we observe what we should have expected, a more profound, or if not profound a more skilful arrangement or knowledge of colour, of that kind of arrangement for which it must freely be admitted Parisian dressmakers have so long been famous. We can point in no single instance to a lady painter, not even Mdlle. Lemaire or Miss Montalba, who has shown so profound a sense of exquisite colour in female costume as is to be met with in nearly every picture by Stevens or in the lovely water-colour drawings of Heilbuth; although of all means of exercising the taste for colour and arrangement that ladies display so admirably in their own houses when they group together the flowers of the garden and the conservatory, we should imagine none could be more congenial to their taste, we see in the lady painter no attempt at such arrangements on paper or canvas, beyond the conventional method of placing some lovely flowers in a cheap ginger-pot or a Venetian glass, whereas in Paris the lady flower-painters,—in this, however, copying their brother artists,—show an exuberance of fancy and a freedom and exactitude of tone in the arrangement of their flower-

pieces that our English lady flower-painters appear entirely to have overlooked; indeed, in no instance do we find a sufficient regard for the great teacher William Hunt, or anything like even the care and grace so long familiar to us in the charming works of the Misses Mutrie.

At the ladies' exhibition in London there is, as we have remarked, no effort to positively rival the male painters, whereas in Paris there are several instances of work by ladies that, in breadth of treatment and largeness of design, and in recklessness of subject, are as free from timidity as the work of the boldest French impressionist. But such pictures, even in Paris, are the exception, and the ladies there have rushed mostly into the practice of flower-painting with a freedom of design and a looseness of execution which enable them to "throw off" a flower-piece in an afternoon. But although the Parisian lady painters are, as is natural, very fond of flower and fruit painting, they seem to exercise their taste in this direction, like many other painters, as a mere agreeable and highly remunerative pastime. In Paris people live surrounded by flowers, and it must be to the painter an irresistible temptation to endeavour to perpetuate on canvas the charms that are so often about her.

The lady painters of Paris, in point of fact, show no disposition whatever to hesitate in competing in every way with their masters and brothers; and if it were not for the knowledge that we have that the ladies' exhibition contained alone their own handiwork, the visitor, we feel sure, would be perfectly unaware that he was visiting any unusual exhibition, with, however, this rather uncomfortable admission, that he will be forced to allow that the general tone of the ladies' exhibition in Paris is not quite up to the work of the other picture exhibitions.

The lady artists of to-day at least have but little sympathy with that class of workers so many of whom we have all seen from time to time patiently and painfully copying pictures in our own and foreign galleries, though if those who instruct us in matters of art just now see the great advantage to be derived from this mode of idleness, we scarcely think that the life in the *ateliers* and schools of Paris,—now so crowded with lady artists,—is a very much more hopeful field for reflection. Under certain conditions, and aided by devotion, a degree of wisdom and an experience difficult to obtain, a smart young American lady or a plodding English girl, with an ability for work and study equal to the strain of this means of developing genius, might possibly be able to withstand the difficulties which must environ the lady artist in any of the good *ateliers* now existing in every part of Paris. But as long as we are all, and especially the ladies themselves, so heavily handicapped by social trammels, we doubt very much whether the prospect is an agreeable one, and,—even if the life is romantic at the outset,—whether the more real and more uncertain future that is to follow is an enviable one. We rather think that the distractions of society,—too often, after all, only the society of "villadom,"—and in most cases the affectionate duties of the household, draw too heavily on the time and thoughts of the lady artists to allow of their bestowing all their devotion to the less important pursuit of art.

The history of the lady painters of the past, of a Mdme. Lebrun, of an Angelica Kauffmann, or a Rosalba Carriera, is so full of interest that their lives have taken a place in the story of the last century sufficiently dignified to be free altogether from sordid and trifling considerations, and although we have heard enough of the struggles of the early lives of painters in all times, no painful tales have yet been made known to the world of the difficulties with which lady artists have had to contend, nor do we think that any good is ever likely to be attained by such painful details being made known. The success in our own day of such lady artists as Rosa Bonheur, Miss Thompson, Mrs. Ward, Mdlle. Jacquemart, Mrs. Jopling, the Misses Mutrie, the Misses Montalba, Miss Havers, Madame Browne, and Madame Lemaire, in France and England, and of Mrs. Halleck Foote in America, with many others that could be named, has had the effect of creating a host of followers whose works are now more than sufficient to cover the ample walls of more than one exhibition in Paris and London. It is not ungratifying to find that many of these, as we see them this year, afford a fair promise of a higher level of merit. A new field of occupation has been opened to the ladies, but one more arduous than the greater number of them at present seem to have suspected.

OLD HAMMERSMITH CHURCH.

A BRIEF notice of old Hammersmith Church, which was lately pulled down, may appositely follow our articles of last week upon the rebuilding of the parish churches at Chiswick and Kew. Originally a hamlet of Fulham, in the Kensington division of Ossulstone Hundred, and comprising about 3,000 acres, Hammersmith is believed to derive its name from *ham*, a home or township, and *hythe*, a wharf or landing-place,—compare with Erith, Greenhithe, Rotherhithe, Queenhithe, Lambeth, and the like,—the settlement by the harbour or creek. The creek which still remains in the Mall was formerly watered at its further end by a rivulet from the old Oak Wells near Wormholt, or Wormwood, Scrubs. In the court rolls of Pallingswick Manor (a hunting-seat of King Edward III. and home of his favourite Alice Perrers, now represented by Ravenscourt Park), of the early part of King Henry VII.'s reign, the name appears as Hamersmith, as also in those of Fulham Manor down to 1820. Fulham Manor,* granted to Erkenwald, fourth bishop of London, son of King Offa, and who built Bishopsgate, is thus set out in Domesday Book:—"M in Fuleham tenet eps Londonie xl. hidas" [valued at as many pounds] . . . . . hoc M fuit et est de episcopatu." Long famous for the retreat it has afforded to adherents to our earlier faith, as well as for its nurseries and market-gardens,† Hammersmith appears very early on our history's scene. Hither came the Danes from Cirencester in the year 879, when, according to Roger of Hoveden and Henry of Huntingdon "in insulâ *Hame* hiemavebant." This island of Hame is the Willow Ait above the Suspension Bridge. During ths Civil Wars it formed the theatre of many movements, counter-demonstrations, and negotiations. At the house of Sir Nicholas Crispe, his headquarters in Hammersmith, Oliver Cromwell received assurance of support from the City of London; a few years later he narrowly escaped from the plot of Synderford with his associates to attack him from an inn at the eastern end of Gould-hawk-road on his way from Hampton Court to Whitehall. The parish church of St. Paul had been erected in 1629 as a chapel of ease to the mother church of Fulham, but Hammersmith was not made a separate ecclesiastical district until two hundred years afterwards. The chapel was consecrated by Laud, in whose volume of Devotions, edit. 1667, p. 278, will be found a prayer upon the laying of its first stone on the 11th March, 1629. Chief promoters of the scheme were the Earl of Mulgrave, who was buried in the chapel, and Sir Nicholas Crispe, a Guinea merchant, celebrated for his loyalty to King Charles I. Edmond Sheffield, Earl of Mulgrave, received the Garter for his prowess against the Spaniards in 1588; his grandson, created Duke of Buckingham and Normanby by William III., was ancestor by Lady Katharine Darnley, natural daughter to James II., of the present Marquis of Normanby. Lord Mulgrave lived at Butterwick House, Queen-street, taken down, together with the magnificent cedar tree, in 1836; Sir Nicholas Crispe at Brandenburgh House, which now survives in name only. The latter was buried with his forefathers at St. Mildred's, Bread-street, but he directed that his heart should be deposited in an urn by the bust of his beloved sovereign which he set up in Hammersmith Church. It was long a custom to refresh the heart with wine on the anniversary of its entombment. To Sir Nicholas is ascribed the present method of brickmaking in this country. Amongst other memorials in the old chapel may be mentioned those of Sir Samuel Morland, mechanician and inventor, Sir George Shee, bart., the Impeys, including that of Sir Elijah, Murphy and his mother, Dr. Askew, the great bibliophile, and Thomas Worlidge, renowned for his etchings, who lived over the old wine-storehouse of the Lee's nursery garden, formerly a vineyard. A full description of the church appears in Bowack's "Antiquities of Middlesex," 1705. The bridge was built in 1825, from the designs of W. T. Clark, at a cost a little in excess of 45,000*l*. The foundation-stone of its northern tower was laid by the Duke of Sussex, who was very partial to Hammersmith, and would often retreat hither to his "smoking box,"—a back parlour of the Doves tavern by the waterside. The prospect from the Doves is said to have inspired Thomson with some lines in his "Winter," whilst in many of De Wint's pictures may be recognised the meadows and river banks of Fulham.

At Fairlawn House lived Dr. Charles Burney, brother of the authoress of "Evelina," the Greek scholar and associate of Porson and Parr. Broadmore House, Sir Elijah Impey's home (marked by its Classic columns and pediment), formed that part of old Butterwick House (so called from the ancestral seat of the Cripses in Lincolnshire), which was built by one Ferne for Mrs. Oldfield, the actress, whose initials were set on the cisterns and other lead work. Sir Samuel Morland, removing from Copt Hall (Vauxhall), spent his declining years at Walborough House, recently Cohen's School for Jews. Visited by Archbishop Sancroft and Evelyn, he gave them to examine "his wooden Kalender, which instructed him all by feeling, and other pretty and useful inventions of mills, pumps, &c., and the pump he had erected that serves water to his garden and to passengers with an inscription." This last-named is preserved. Morland used to solace his blindness, as Evelyn says, "by playing himself psalms and religious hymns on the theorbo."* In the parish register is entered the marriage of his subsequent heir, George Morland, to Anne Ward (1786). This ill-fated genius who, dying in his forty-second year at a sponging-house in Leather-lane, Holborn, lies in the cemetery of St. James's Chapel, Hampstead-road, passed much of his later life at the old Plough Inn, Harlesden-green. If we consider the many honours and decorations that were bestowed with no illiberal hand upon the wealthy during the eighteenth century, we may well ask what greater honour, what prouder title, what more brilliant star, could one of them have earned for himself or his posterity than by the award of a certain, albeit modest, independence upon such men as Chatterton, Goldsmith, George Morland, or Mozart? From the first-named, Walpole, profuse with his thousands, withheld his hand; and to this day our indignation swells at the thought of the contemptible situation that was found for Scotia's sweetest, grandest, and most patriotic poet. In the Upper Mall, at a house afterwards occupied by Dr. Radcliffe, lived the Queen Dowager of King Charles II. The house was demolished about eighty years since, but here yet stand some of the elms which were planted in her lifetime. Brandenburgh House is connected with the memories of Prince Rupert, George Bubb Doddington, the Margravine of Anspach, and Caroline, wife of George IV. Built for 25,000*l*. by Sir Nicholas Crispe, it was plundered in the Civil Wars by Fairfax, who sojourned here. Sir Nicholas's nephew sold it in 1683 to Prince Rupert for Peggy Hughes, the actress, in whose name the purchase was made. "From this time," says Count Grammont, "adieu alembics, crucibles, furnaces, and all the black furniture of the forges: a complete farewell to all mathematical instruments and chemical speculations: sweet powder and essences were now the only ingredients that occupied any share of his attention.† From the Murrays, dukes of Atholl, it came to the hands of the son of a Dorsetshire apothecary, George Bubb, better known as Bubb Doddington, on succeeding to his uncle's property, whom King George II. made Lord Melcombe. Doddington, who fills a conspicuous position in "The Chairing of the Candidate" of Hogarth's "Election" series, added to the house a splendid gallery‡ for statues and antiquities, but his thorough lack of taste or elegance of mind were evident in the tawdry gilding and finery which he profusely scattered all over the interior of a villa he chose to call "La Trappe." Here he was occasionally visited by one man of sense, Dr. Johnson. Once going out into the garden in a storm of wind and rain, Doddington observed it was a dreadful

* A corruption of Fullenham or Foulenham, *volucrum domus*, being part of the fen that once extended westwards from Westminster.

† See Bradley's "Philosophical Account of the Works of Nature" (1721) for an account of the fruit-gardens.

* Evelyn's Memoirs, *sub* October 25th, 1695.

† Mrs. Hughes was of the King's company, and one of the earliest women-actors. She began her career after the opening of Drury Lane Theatre in 1663, and was the first female representative of *Desdemona*. Her daughter Ruperta married General Howe. She lived here for ten years.

‡ The gallery was embellished by Cipriani, then living in Great Church-lane. Here he died in 1785, and Bartolozzi wrote the inscription over his grave in Chelsea Cemetery.

night. "No, sir," replied the Doctor, in a reverential tone, "it is a fine night; the Lord is abroad." Views of the house are in the the fourth volume of the "Vitruvius Britannicus." In 1792 the Margrave of Brandenburgh-Anspach bought the house of Mrs. Sturt, one of whose masquerades here is described in a letter from Sir Gilbert Elliott to his wife under date June 13, 1789, in the "Life and Letters of Sir Gilbert Elliott, first Earl of Minto," vol. i. The Margrave's widow, herself the widow of William, sixth Lord Craven, resided here for many years and built a miniature theatre in the garden. Here Queen Caroline held her Court during the trial in the House of Lords, when the whole neighbourhood was kept in a constant turmoil by the number and effusion of her sympathisers. Soon after returning thanks in Hammersmith Church for her acquittal, she died on the 7th of August, 1821. The scandalous scenes which accompanied this unhappy queen's funeral procession from Brandenburgh House through London to Harwich are graphically told in Timbs's "London and Westminster."

No traces exist of the hospital by Stamford Brook mentioned by Stow, and shown in Norden's Survey, but of the numerous Roman Catholic establishments in this quarter the oldest is the Benedictine Convent, which dates from a period anterior to the Reformation. Ostensibly a girls' school, it escaped the general destruction of religious houses by reason of, according to Faulkner, its want of endowment. It was subsequently held by the sisterhood from Munich which Queen Katherine of Braganza had founded in St. Martin's-lane, Charing Cross, under the presidency of the Lady Frances Bedingfeld. At the boarding-school attached to the convent have been educated many members of our leading Roman Catholic families,—the Drummonds, Talbots, Bedingfelds, Plunketts, Petres, &c. In the *Domestic Intelligencer*, for 13th January, 1680, will be found an account of Titus Oates's commission to search this house, which was also attacked by the "No Popery" rioters in 1780. George Gillow built the chapel in 1812; in 1869 the sisterhood vacated a convent that had sheltered Dr. Giffard, chaplain to King James II., who appointed him president of Magdalen College, Oxford; and it has now become a training college for Roman Catholic clergy. College-place stands on the site of Lucy House, the home of one whose chief claim to fame lies in his being the grandson of the Lucy of Charlecote, whom Shakspeare immortalised. In the terrace lived Murphy, Mrs. Mountain the singer, and the painter and quack, De Loutherbourgh; and in his cottage here Leigh Hunt kept his collection of poets' locks of hair. We may conclude our short sketch of a highly interesting quarter with a reference to a woodcut in Hone's "Every Day Book," 10th September, 1827, of a curious old pump, then standing before a font or vase in Webb's-lane, over against the Thatched House, of which, however, nothing with certainty can now be said.

THE LINE OF FRONTAGE AND THE DEMOLITION OF HOUSES.

WE referred in our last to a very important decision which was given by Vice-Chancellor Bacon on the 28th of February last, in the case of Barlow and Elsdon v. The Vestry of Kensington. It is, perhaps, the most noteworthy decision on the Metropolis Management Amendment Act, 1862, which has come to our notice for a long time. It is also of still further importance in that it shows that there is a practical, though not a formal, appeal against the decision of a magistrate who orders a building to be demolished under section 75 of the above Act. For in this instance the stipendiary magistrate at Hammersmith Police-court had ordered a part of a house which fronts upon the Kensington High-road, and is a corner house, so to say, of De Vere-gardens, to be pulled down. The owner thereupon appealed to the Quarter Sessions. This Court decided that it had no jurisdiction to hear the appeal, and this decision was upheld by the Queen's Bench Division. Thereupon the houseowner, with praiseworthy perseverance, takes proceedings in the Chancery Division and asks for an injunction to restrain the Vestry of Kensington from carrying out the order of the magistrate, on the ground that it was, in fact, a wrong order, and made upon a mistaken construction of the seventy-fifth section of the Act of Parliament.

The question, after all, is a simple one; the section in question says that no building shall be erected beyond the general line of buildings in any street in which the same is situated. It further states that such line is to be decided by the Superintending Architect of the Metropolitan Board of Works, and then, that any building which projects beyond this limit, and which is thus built contrary to these provisions, may be demolished by order of the magistrate. The house about which all this litigation has taken place was built in the Kensington-road, and it was described by the Superintending Architect as being in Kensington-road, and therefore it was not, of course, to extend beyond the general line of buildings in Kensington-road, which was, to quote the words of the Act, "the street in which the same is situate." In fact, however, the corner house extended beyond the line of frontage in De Vere-gardens, and therefore the magistrate ordered so much of the building as projected beyond the line of frontage in De Vere-gardens to be pulled down. "But," said the Vice-Chancellor, "neither in the words of the statute, nor according to the facts proved, can it be truly said that the plaintiff's existing house to which the order is said to apply ever did stand in De Vere-gardens or anywhere but in Kensington-road." And then further on he proceeds:—"The Act only authorised him (the magistrate) to prevent any obstruction by a man in the line of houses on which his building was situate." And the judge also points out that the fact of a doorway being made into the side street from a house which really belongs to the main street cannot make any difference, or turn a corner house, so to say, out of one line of buildings into another. The result, therefore, of this decision is to leave the owners of corner houses full liberty to build to the edge of the pavement in side streets, and beyond the line of frontage of such streets, but to prevent them from going beyond the line of frontage in the street to which the house actually belongs. Such by this recent decision is the state of the law; but having regard, as the Vice-Chancellor said, to the very great importance of the point, we should not be surprised to see the matter carried to the Court of Appeal. But until the case is overruled it must be considered as good law, and to have made the point perfectly plain and simple.

"ON THEATRES." *

IN writing a paper on theatres, I propose to give preference to practical results rather than to the many theories advanced, which, although well in their way, are but of little value to an architect who wishes to set about getting out the plans for a new theatre; and in so limited a space the information given must take the form rather of a series of suggestions: to go into full details would be impossible. For this purpose I propose to imagine a site selected, of certain dimensions, and upon this, as it were, build up my suggestions, step by step, and I will divide it into the following sections:—(1) the site; (2) arrangement, before and behind the curtain; (3) the action of the Lord Chamberlain, magistrates, and Metropolitan Board of Works, as regards the construction of theatres; (4) fire, and protection from fire before and behind the curtain. With these divisions I shall try and deal with it so as to render my meaning clear to you.

The Site.—The first difficulty which presents itself in erecting a modern theatre is the choice of a site. The great object to be attained is to find one in a public thoroughfare or off a public thoroughfare thoroughly easy of access to the public. In fact, a theatre in London would be of very little use unless the thoroughfare were a good one, and had both road and rail accommodation of the best and easiest description. It is this reason, I may say, which makes the Strand the best thoroughfare in London for theatres, and however much a theatre in some outlying part might become fashionable, and for a time pay well, outlying theatres generally do not make a good permanently paying investment, and on this, the paying quality in theatres, the whole argument and practical use of such a paper as this must be founded. National theatres, such as those from the times of the Greeks and Romans down to those subsidised by foreign Governments, are entirely in a different category to the theatres of England. Here they are built by private enterprise, entirely without public funds or help, and are looked upon only as an investment of so much money which must return a certain amount of interest. Therefore, in selecting a site, the difficulties of dealing with it in a crowded position,—and it is only in such a position a theatre can be built to pay,—are these:—The large cost of the land and the ancient lights and rights of the owners surrounding the site, and also the obtaining of proper means of ingress and egress, as, besides the front or main entrance, it is necessary to have side entrances to the stage, and, if possible, to the pit and gallery. Hence the site at the corner of a thoroughfare is best, isolated sites being practically unattainable. All these requirements must be had within a sum which will pay the investor while constructing a theatre that will attract the public. Investors, as a rule, in theatre property require to be paid a much higher rate of interest than would be deemed sufficient on any ordinary house property investment, as the risk is considered to be much greater, and the investors are fewer in number. Therefore the money question must, as I have before said, be made to govern, as it really in practice does, everything. With unlimited space and money the principal difficulties would at once vanish, and everything would be simplified. In the first instance, if the entrance is not in the main thoroughfare care must be taken, in selecting a side street, that the access provided to it be good, in which case a side street off the main thoroughfare becomes almost as good as the main thoroughfare, and, the land being cheaper, pays the investor better. Where some years ago theatres depended for part of their audience upon the passing traffic, now people, as a rule, who lived in town, live outside,—all the houses in the centre of the town being too valuable as offices, shops, and warehouses,—and so living at a distance from the theatres, people usually make up their minds where they will go before they start; the easier the theatre is of access the better its chance of success. In preparing a site for a theatre the auditorium is usually considered first, because it is taken as the remunerative portion of the house, but from a manager's point of view the accommodation behind the curtain, and the easy working of all the various departments, requires quite as much, if not more, consideration. A theatre in which the working departments are difficult to get at, may involve a very serious item of cost, and when the time of a non-success to the management comes the extra expenses are very sorely felt. Serious attention must be therefore paid to those working portions which do not meet the eye of the public, but which try the pocket of the manager, and thus, though indirectly, considerably influence the letting of theatres. The best proportions for a site are those in which the length is not quite twice the width, and any irregularity of shape there may be of the ground should as far as possible be left to the one side, such reserved portions being most useful for the various accommodations required for lavatories, refreshment-rooms, cloak-rooms, extra staircases, dressing-rooms, &c. For the purposes of my paper I will take the ground as being 100 ft. by 63 ft. with the necessary side accommodation for stage entrances, &c., and having settled with the adjoining owners as to their respective lights and other rights, and the plans having been passed, the operations of building may commence.

Before and Behind the Curtain.—In constructing a theatre there are three great points in the auditorium to be kept in mind,—easy access, good sight of the stage, and distinct acoustic properties. Behind the curtain there are two points to be kept in view, plenty of space and accommodation for working, and convenient dressing-rooms for the actors and actresses, &c. In the auditorium we will take it that the theatre is to be one of the ordinary form, which seems to be most acceptable to the British public, and at the same time is generally considered most remunerative; that is, a pit, stalls, dress-circle, upper circle, and gallery, and a theatre on this site can then be constructed to accommodate, in the—

Pit	450	persons	Four private boxes on this level, or 616 on ground floor.
Stalls	150	,,	
Dress Circle	150	,,	and eight private boxes.
Upper Circle	180	,,	and eight private boxes.
Gallery	600	,,	and four private boxes.

In all about 1,700 persons.

For a theatre of this size I think there should

* A paper by Mr. Walter Emden, read by him before the Architectural Association on the 16th inst.

not be more than 18 ft. depth in the dress circle, divided into six rows of seats at most, each row occupying 3 ft. The distance from the front of the circle to the front of the proscenium would be about 33 ft., making with partitions, &c., a total of about 52 ft. from the back of the circle to the proscenium. The corridor behind the circle being 8 ft. wide, the total distance from the outer wall to the proscenium will be about 60 ft. Thus, after deducting the walls, it leaves 35 ft. to the back wall of the stage; adding the projection of the stage beyond the proscenium, its total depth will amount to about 40 ft. The best form I have found for sound is the old horse-shoe; that is to say, a semicircle with the sides produced from it to the proscenium. If desired, some extra accommodation may be acquired to the dress-circle if a row of seats be thrown out forward as a balcony from the general lines of the circles of the house; but every extension over the pit tends to destroy the sound in it. At the sides of the circle, where it joins the proscenium front, it is usual to place private boxes, and this is not only, perhaps, the best position for them, but it is the natural one, inasmuch as it would be impossible in this portion of the theatre to place rows of seats, as only the front row would have a good view, and a large portion of the others would be unable to see at all. The angle which decides where the division between the dress-circle and private boxes should be placed should be governed by the line of vision from the back rows of the dress-circle, for the seats in the circle should not be continued further than the point at which they give a good view of the stage from side to side of the proscenium opening. The width of the proscenium should be 30 ft., the private boxes having a depth of 6 ft. This gives the principal points of the plan. I will next refer to the general points of the section. The height between the different tiers in theatres is greatly varied; but I believe that too great a height is a mistake, not only from the extra cost it incurs, but because the rake of the seats in the various circles, particularly in the top one, or gallery, becomes so extremely steep as, although not perhaps to be absolutely dangerous, still to be very unpleasant to any one possessed of any degree of nervousness. In the gallery of some theatres when you enter at the top it seems as if the slightest slip would cause you to fall head-foremost into the pit, and however comfortable a theatre is from the dress-circle point of view, it is sometimes in the gallery as if you were on a house-top. Besides which, as regards sound, too great a height helps to create large open spaces in which portions of the wave of sound created by the actors' voices is lost. Their voices having to be heard all over the house, and every superfluous foot of space absorbing a proportion of sound, the consideration of this point becomes one of importance. Place the ceiling of the pit immediately at the point under the centre of the circle 10 ft. from its floor, and from the ceiling of the pit to that of the dress-circle 13 ft., from the ceiling of the dress-circle to that of the upper circle 12 ft., and from the ceiling of the upper circle to the ceiling from which the dome springs above the gallery 13 ft. In the various circles the pitch is calculated roughly thus: each person seated behind the other should be able to see over the head of the person seated in front of him, and all should see from this over the top of the circle front to the footlights in front of the stage, and, if possible, see the orchestra as well. It is usual to make steps in the stalls, circles, and gallery, for each row of seats, but in the pit there is a regular rake of the flooring. The height of the stage from the floor of the pit is usually about 4 ft. 6 in., and as the stage should rise from the footlights at the rate of ½ in. in the foot, every one on the floor of the pit obtains a good view with a much less rake than is required for the circles above the stage level. The height of the proscenium from the stage should be more than the width of the opening, which I have taken at 30 ft., say about 35 ft. in height, and from the top of the proscenium opening to the ceiling from which the dome springs should be about 8 ft. This last height should always be as low as possible. The dome should be in the form of a flat ellipse; it is best for sound, and avoids as much as possible any too great height above the proscenium, for where there is too great a height I have always found that distinct sound is very largely destroyed and absorbed, and consequently rendered imperfect. The large amount of air contained in the great height of ceiling acts like blotting-paper on water and absorbs the sound, or rather draws it off, there being more power of attraction to the sound wave where the air is in the greatest body. Thus far I have dealt with what, from such experience as I have had, I consider to be the dimensions of the auditorium of a theatre on a site of the size named, and the suggestions here made will meet the requirements of most sites, as they can be proportionately extended or reduced, although, of course, all the dimensions given would not increase in the same ratio in all cases. I believe a thoroughly-good result can be obtained from them for both of the two principal essentials required, viz., sight and sound. I do not say for an instant they are the exact or only dimensions on which an auditorium should be built; but I find that theatres of or about these dimensions have produced the desired effect. No doubt there are many valuable theories, and there are many alterations that might add much to the grace and beauty of a building of this kind; but I do not think it possible to discuss them thoroughly in a limited space, and there are many of them which could not be governed by what must govern this paper, and in most cases any theatre, and that is building a theatre to pay. They cannot be simply architectural buildings in the true sense of the words, and the most an architect can do is to produce as well-proportioned and tasteful a building as a limited site and limited capital will admit of. With regard to the question of exits and entrances to the auditorium, I propose to deal with them when I come to the question of protection from fire; but I would suggest that in all cases when arranging the position of the auditorium, the greatest regard should be had to easy and direct egress and ingress from every portion of the house into the street. The question of men and women's accommodation for every portion of the house should not be forgotten, as, although not perhaps directly affecting the letting of the theatre, comfort in a house adds directly to its popularity with an audience, and so indirectly adds to the profits of the theatre. In all cases the question of seating and good accommodation for the public should be made a primary one, as although a few seats may be lost, there is no doubt the pleasures of theatre-goers are greatly increased if attention is paid to these points. The stage should project into the auditorium some few feet, so that when singing or speaking the actor may be more into the body of the house, and his voice thus better heard, and not so immediately affected by the great space in the height behind the scenes. With regard to the stage, the width of the site being 63 ft. and the opening of the proscenium 30 ft., there would be on either side, exclusive of walls, a space of about 15 ft., or equal to about half of the proscenium opening, and in a site where the side space is less, it will be found that the difficulty of working the scenery is proportionately increased, and the two proscenium wings which are commonly called "tormentors," inasmuch as they shut out portions of the view of the stage from the audience, having to be pushed forward; so that although the actual opening may be more, the practical gain is nothing, but rather a loss to the house and to the management through the difficulty of working. A stage and the working parts of a theatre badly constructed for accommodation may involve the cost of very many extra hands to the management, and so add an item of cost to the working expenses, which makes a considerable addition to the rent, and is an outlay which shows no return. Of course, depth of stage is very desirable for scenic effect, but it must also be remembered that in theatres of this size the class of performance is seldom such as to require any very large number of people on the stage. The two sides of the stage are known as the "prompt" and "O. P.," the "prompt" side being on the right of the audience, and "O. P." on the left. The "prompt" side derives its name from the fact that it is on this side the prompter has his seat, but in opera-houses and theatres in which operettas are played there is a prompter's box in the centre of the stage, immediately in front of the orchestra, so as to be near the artists. The cellar is in the centre under the stage, and extends over nearly the whole width of the proscenium opening, and over nearly the whole depth of the stage behind the proscenium, so that although the space from the stage to the mezzanine floor is only about 9 ft., the extra depth of cellar should be sufficient to admit of a considerable portion of the scenery, &c., being lowered into it. All round the cellar on the mezzanine floor, under the stage, a clear space is required for working the machinery of the stage, such as traps, slides, &c. There should also be next the proscenium, at each side, staircases down under the stage; these staircases are placed in the spaces created by building the proscenium wall at an angle from the side walls; also at this position come any necessary doors of communication from the stage to the auditorium, all such doors being of iron. The accommodation behind the curtain should be housekeeper's room, hall-porter's room, management rooms, wardrobe-room, dressing-rooms, ballet and supers' rooms, band-room, store-room for properties, carpenter's shop, which, it should be observed, must not now, as in former times, be placed in the roof of a theatre; artist's room, and, in a theatre of this size, a bridge for him to paint the scenery from; scene-dock, for stowing scenery in; and lavatories, &c. There is a practice in some cases, for economy in area in the site, and of money, of placing dressing rooms in the "flies"; this is not only ill-advised because it reduces the working space but it places the dressing-rooms at too great a height and distance from the stage, and the communication from the stage to the "flies" is usually anything but comfortable and easy, and the heat and vitiated air in the flies from the gas battens and floats, &c., which are used render such dressing-rooms almost unbearable, and certainly most unhealthy, to say nothing of the danger in case of a fire. If possible, the dressing-rooms should be constructed in a building separate from the stage, communicating with it by a single opening only. It would also be an advantage if the various dressing-rooms could be arranged on the prompt side of the stage, with direct and easy communication to the stage and street, and having external lights. This can usually be done, as a house is generally taken in a by-street for the stage entrance, and the rooms over can be used for the above purpose, as well as for the management offices, housekeeper's room, and wardrobe-room. The height of the "flies" should be about 28 ft. from the stage for a proscenium of the size mentioned, and it should be arranged as far as possible that these flies, from which all the "borders" and cloths are hung, and the upper portions of the scenery are worked, be kept as clear of obstruction as possible. There should also be easy communication from the stage on both sides of the proscenium opening to the "flies," they being constantly used during a performance. Under them come the grooves, the wings and flats are worked in. The depth below the "flies" of these grooves is regulated by the rake of the stage and height of the scenery. The property-room in a theatre should be upon the stage level; at all events, there should be a room in which a certain amount of properties can be stored for the immediate use of the piece being performed, otherwise a great deal of extra cost in labour is incurred. The supers.' room is mostly under the stage at the sides of the proscenium walls, and should be on the prompt side. This and the ballet or female supers.' room should, if they have no communication with the outside, have ventilating shafts, as large numbers usually dress there. The ballet-room should be on the opposite side of the stage to the supers.' room; both should have water laid on, and distinct accommodation close to them. Under the stage there should be the musicians' room for them to retire from the orchestra when necessary. This is very desirable in order to keep them together for the time when they may be required for the orchestra, and for them to store their instruments and music in. The green-room is, of course, on the stage level, and as close to the prompter as possible, being usually under the dressing-rooms, at all events near them. The scene dock is simply a space available from the stage wherein to store scenery. It must, according to the new regulations, be so constructed as to be cut off from the stage, as also must all other workshops. There must also be provided a long narrow door or opening through the outer wall of the theatre, enclosing the stage, into the street, through which to bring in or take out scenery. The housekeeper's and hall-porter's rooms should naturally be in the house at the entrance to the stage from the street. The painting bridge in a small theatre is built parallel with the back wall right at the back of

the stage, and is supported by a girder running between the two "flies." Against the back wall is a frame on which the scene to be painted is fixed, and which can be raised or lowered, so that the artist on the bridge can get at any portion of the scene on which he is engaged. There should be a small room in the "flies" cut off from them for the private use of the artist in which his colours, sketches, &c., may be kept in safety. With regard to ventilation, the public, as a rule, have such varied opinions on the subject that it is extremely difficult to satisfy them. One man will think a place hot, that another thinks cold; and for the most part people in a theatre expect the atmosphere to be no hotter than it is outside, and often require it to be cooler, forgetting that the natural heat from the bodies of a large number of persons together inside a building must, of itself, keep up a considerable extra heat. It is almost impossible to lay down a fixed rule for the ventilation of buildings of this kind, in which there are so many openings and circles to twist and turn the currents of air. The heat from the people's bodies, and breathing, added to the ill effects on the atmosphere by the burning of large quantities of gas, make it impossible under the present circumstances, where gas is used, to accomplish ventilation with any degree of perfection, although much can be done.

To ventilate a theatre one must draw off the vitiated air, giving access to the fresh in its place. A simple and effective means of ventilation is by small shafts made at the back of each circle, about 4 ft. apart, in the ceiling, leading into the roof. Round the sunlight, and at various portions of the domed ceiling, perforations can be made into the same roof space. The heated air, always ascending, passes up the shafts and perforations into the roof, it being the highest point. The heat from the sunlight greatly facilitates the draught to draw it off into the roof from the shafts and perforations, while one large ventilator out of the roof, which ventilator should be above the sunlight, will complete this part for drawing the heated and vitiated air out of the building. To introduce cool air is now the necessity, otherwise the heated air will, having nothing to fill its place, not have sufficient incentive to go out. Direct communication with the outer air should be made by means of openings and air bricks in the outer walls, at some height above the heads of the public, on each tier. In the dress and upper circles, where there is a corridor outside the circle, small box shafts, tapering as they are carried across to the outer wall, can be arranged. You cannot accomplish the cooling of a building by the chance opening of doors and windows, but a fairly good system of ventilation can be spoiled by such cross currents, and great rushes of air, as is caused by the indiscriminate opening of any aperture in the inconsiderate thinking that an opening must ventilate because a draught is felt. The proscenium walls which part the auditorium from the stage prevent much of the heat created by the gas in and about the stage from passing into the auditorium; but, as a rule, there is very little if any ventilation provided over the stage, and, after a time, the heated air having filled the space over the stage and having no exit, finds its way into the auditorium; therefore, to prevent this, there should be ventilation through the roof over the stage, besides that over the auditorium, and also some small direct openings for the admission of fresh air. Thus, although it is impossible to construct an invariable system of ventilation for all theatres in the various circumstances under which they are built, by very simple means much can be done to improve it.

I will now refer to the action of the Lord Chamberlain, magistrates, and Metropolitan Board of Works, as regards the construction of theatres. In building a theatre within a certain district, before it can be opened the plans, &c., have to be submitted and the theatre inspected by an officer appointed by the Lord Chamberlain, by whom theatres are licensed. Outside this district they are under the supervision of the magistrates. As a protection to the public that theatres are well constructed, no doubt the Lord Chamberlain's supervision was extremely useful, and the fact that the loss of life in theatres under the jurisdiction of the Lord Chamberlain has been so extremely small ought to be considered a proof of the benefits of this supervision. For this reason I cannot but consider much of the great movement now made about theatres in England as the result of a general scare; still, when as now, a very large number of theatres are built in extremely contracted and varied positions it is no doubt very necessary that there should be some more regular authority and one thoroughly conversant with building matters, in whose hands the supervision and guiding of the construction of such public buildings should be placed. That this supervision has so far been placed in the hands of the Metropolitan Board of Works is no doubt calculated to improve the safety of the public in theatres, and although it may create a considerable feeling of opposition and unpleasantness at first, particularly where theatres have been opened for long periods without accident, and the managers are called upon to make considerable structural alterations, still, there is no doubt that when this feeling wears off it will be generally acknowledged that benefits have been derived therefrom. I do not wish to suggest that a speculator, for the purpose of making money, would build a theatre in any position, and anyhow, but the supervision gives a surety to the public that there cannot be any possible risk of a theatre being built except with every possible facility for ingress and egress, and every other necessary precaution being taken. Of course, a theatre being a complicated building, it is extremely difficult for a body like the Board of Works or its officers to be at once so thoroughly acquainted with theatres as always to be perfectly correct in every opinion they express, or requirement they desire, but as the principals in the office should be men of considerable experience in building matters, they ought not to take long before that difficulty is improved away. I can say from experience with the officials that they are in all cases quite open to reason, and if a question is properly stated, or a difference of opinion is properly laid before them, they will soon be found to take a correct view of the same, and rather facilitate than oppose the architect in his duties. No doubt, in the Building Act itself there will arise many differences of opinion, and if the Board err, no doubt they will err on the side of over-precaution, but, at all events, it is better that a little more money be expended and a little more trouble given, than that there should be any uncertainty as to the safety of the public for want of proper precautions. It would certainly seem desirable that, if the Board of Works are to have the supervision of theatres, there is no necessity for the supervision of the Lord Chamberlain's office, particularly where it is for one and the same object; it seems somewhat absurd that, after depositing the plans of a theatre with the Board of Works, and after passing through the stages of alterations until they express themselves satisfied and ready to grant their certificate, it should still be necessary to deposit plans with the Lord Chamberlain, for him to do the self-same thing, which he does by his approval, and granting the licence for stage plays, &c. It may be said that if the Board of Works grant their certificate the Lord Chamberlain would not refuse his approval, but that is only another argument for not multiplying uselessly the difficulties and costs in building a theatre, which are already quite many enough. The Lord Chamberlain's censorship of plays is extremely desirable, and should if anything be extended, but still it would be very much better if the whole question of the construction of theatres rested with the Board of Works, or some such efficient authority. The magistrates, —the other body in power,—are likely to be misled, and having usually no practical knowledge of the subject, are liable to take up impracticable theories, and then be very difficult to move from them. It seems to me that it would work more justly if, in all public buildings under their authority, which have been approved as safe, and properly erected, by the Board of Works, a permanent licence were granted, subject to supervision or closing if they became disorderly houses; otherwise the licence once given should remain in force, the managers always maintaining any necessary regulations made from time to time for their safe and orderly working by the authority in whose hands such matters were placed. No taking out of yearly licences should be necessary. Many magistrates object to certain very respectable classes of places of amusement on some particular principle. Again, any one, with or without reason, can lay a formal objection on some question of exit, or other matter, which, after proper examination, turns out to be a myth, but it still gives no end of useless trouble on licensing day; in fact, the yearly licensing system of places of amusement is absurd, and in my opinion there is not a single argument in favour of maintaining such a system.

Prevention from Fire.—In dealing with this portion of the subject, the means of exit and entrance must be more directly referred to. It is now a requirement of the rules of the Board of Works, that there shall be at least two exits from every part of the house; that the floors of passages, staircases, lobbies, corridors, and landings shall be of fireproof or fire-resisting materials, and every staircase for the use of the audience shall be separate and enclosed by brick walls. There shall be no winding steps, and every opening in the proscenium walls,—that is, between the stage and the auditorium,—shall be closed by an iron door, and the openings are generally limited to one of a specified size. All theatres now in London are naturally not built of materials calculated to resist fire, although staircases, corridors, &c., may have been made to fulfil the requirements of the Board of Works, but in the event of a fire the passages, corridors, &c., would, I believe, in every instance take the whole of the audience without overcrowding, but the danger in case of fire principally arises from the fact that a panic ensues, and the people are apt to rush to one entrance, particularly the usual one to the building, and block it before they get into the corridors. As far as possible, one of the best arrangements for the protection of the public is that the different entrances to each part of the house should be on either side of such part, or as far apart as possible. If two entrances are close together the crush towards them would be but little relieved by the fact that there were two exits at one point instead of one, but by the entrances prominently situated being apart, the panic to a great extent ceases. The struggle and cries add to the excitement and panic, but when the way out is comparatively clear, the panic soon ceases, and the danger in a theatre, as I have said, is the panic. If the crowd be orderly, less than ten minutes with the ordinary entrances at work will clear any London theatre. It is customary on either side of the gallery to have doors which can easily be broken open, which doors lead into the staircases from the private boxes and upper circles to the corridors at the street-level, and it is also necessary now to have an extra separate staircase from the gallery direct to the street.

The pit arrangement is of a similar nature: it has doors which can be easily broken open at each side, and also an extra separate and direct exit to the street. The upper circle, dress-circle, and stalls have each staircases on each side leading to the corridor on the street-level; often the dress-circle is on the street-level. Of course, if the nature of the site will admit on any level of extra exit-doors direct on to the street they should be made. There is also usually a Royal entrance, which forms an extra exit in case of fire from these parts. No staircase can be less than 4 ft. 6 in. wide; and that staircase can be used only to accommodate 400 persons. Staircases have to be increased by 6 in. for every 100 extra persons up to the maximum of 9 ft.; but I consider that no staircase from the pit or gallery should be less than 6 ft. in width, and, as far as possible, the staircases should be built in short flights with half-landings as the bottom of each flight. The proscenium-wall must now pass right through the roof dividing the building into two distinct parts. It is necessary for the scene-dock, property-rooms, carpenters' shops, and store-rooms to be closed off from the rest of the house by brick and fireproof construction. The most constant source of fires arises from the use of gas. There are such a number of joints left ready for connexion to floats and battons for lighting up the scenery, that there is always of necessity a considerable escape, and the material used for scenery is of such a highly inflammable nature that but for workmen being continually at hand many more fires would occur. It would be extremely difficult, perhaps impossible, to construct a stage and work its machinery, which would be absolutely fireproof, with the present known materials, though much might be done to make it safer. The immediate neighbourhood of fire-hydrants, together with the fact that there are now no workshops allowed in the upper parts of a theatre, at least over the auditorium, all tend to reduce the chance of a fire on the stage. Taking it for granted that the regulations of the

Board of Works are complied with, the real risk in theatres of fires is to the insurance offices. I do not believe, except the chance of suffering a few bruises in the worst of the rush, any one would be seriously injured, though there is always the chance of an accident in the safest of buildings, which nothing can guard against, where fear governs a large number of persons. Over each extra exit there should be an oil-lamp, so placed that if the gas went out the exits could be seen at once. As the public are educated into the facts, and see promptly the means of extra exit,—for all exits should be prominent and easily distinguished,—they will divide into separate streams, when the greatest danger is done away with. The following are some few suggestions for the protection from or prevention of the spread of fire. In a new theatre it would be easy, without any considerable extra cost, to erect a building, as far as the auditorium is concerned, in a practically fireproof manner, although no doubt the use of wood in the auditorium very greatly assists the sound, and the loss might be very much felt in a large theatre; in one of this size it would not be of such vital importance. The means to be proposed must naturally partake more of the nature of prevention than absolute protection, as it would no doubt be impossible to build a theatre in all respects fireproof, although in the auditorium there would be practically nothing but the seats and curtains to take fire. In building warehouses where concrete and iron are used, no doubt there is a very considerable objection to the use of iron, as when it gets over-heated it twists and possibly pulls down the whole of a floor which might otherwise have stood if it had been constructed of timber. But in warehouses there are large quantities of goods stored which serve as fuel to the fire, and are the cause of the heat which twists the girders. Remove this fuel, and the fire has not the means of life, having nothing to feed itself with. Therefore, where there are no stores to keep up a fire, a construction of iron and concrete would stand thoroughly well, and would not be subject to the same objections as in a building of the warehouse class. First, therefore, construct the whole of the circles of iron and concrete. This can be done in a very simple manner by rolled iron joists and concrete arches at a very little extra cost, and in new theatres might be made a regulation of the Board of Works. With regard to any woodwork which it may be necessary to employ for fixing the box fronts, or to attach the lathing to for the under ceilings, the whole of it can, as well as the plaster and decorations to it, be coated in asbestos paint. The main structure of the roof can also be executed in iron, while the ceiling itself could be made in panels of a decorative class without any material in it likely to take fire. There is no insuperable reason that the whole of the circles should not be enclosed by brick-work walls, as the corridors and staircases have now, under the present regulations, to be entirely of stone or concrete.

These suggestions cover the auditorium. There is no doubt that an iron curtain is the ostensible means of cutting off the stage from the auditorium, but a curtain of this description is extremely cumbersome and liable to get out of order, so that other means would be much more desirable if they are possible. In France an iron wire gauze curtain is used, but a curtain of asbestos cloth would certainly be effective, at least for a time. With the auditorium of fireproof construction, the whole question resolves itself into one of keeping the flames on the stage back, and staying a great deal of the draught so fatal in spreading fires, and thus giving the audience and *employés* sufficient time to get out of the building. In the construction of the stage a large portion of it could be very easily constructed of iron. There is no unalterable reason why all the sides of the stage should not be constructed of iron and concrete, while the centre or working portion of the stage could be covered with asbestos paint, so as at all events to be able to resist fire for some considerable time; and such being the case, the question is either one of available exits or good appliances to extinguish fires. Referring to the greatest danger on the stage,—the use of gas,—if electric lighting were to become generally used upon the stage and auditorium the risk in theatres would be greatly reduced, and with such precautions as have here been named a fire of any consequence would be of very rare occurrence. Of course, in theatres there must be large quantities of rope and canvas, &c., as well as wood in the machinery and scenery which it would be impossible to render absolutely fireproof, and therefore for this reason prevention from spreading, rather than thorough protection from fire, must be obtained, which I would suggest can be done by some such means as are here pointed out, and to complete such couse of prevention it only remains to remove the greatest cause of fires,—gas,—and substitute for it another means of lighting, which, so far as the inventions of the present day go, must be electricity.

PATENTS AND THE NEW GOVERNMENT BILL.

THE Patent Bill brought in by Mr. Chamberlain, the Solicitor-General, and Mr. John Holms (M.P. for Hackney and a Lord of the Treasury), is designed to amend and consolidate in a single measure the provisions of the numerous laws relating to patents, trade-marks, and designs; and at the same time to simplify procedure, to lessen its cost, and to increase the degree of protection afforded. The laws regulating the grant of patents date from 1852, the principal Acts affecting the registration of useful and ornamental designs from about ten years previously, whilst the Trade Marks Act was passed in the year 1875. Yet, looking to the many amending and cognate Acts that have been passed from time to time in connexion with these, it will be seen how comprehensive is the operation of the new Bill. Reserving our criticism, we will mention some of the principal executive and administrative changes which it embodies.

In the first place, the titular staff of Commissioners of Patents, Clerk and Assistant Clerk to the Commissioners, and Registrar of Trade-marks and Designs, is to be swept away, all proceedings relating to the grant of patents or the registration of designs and trade-marks to be relegated to an officer, styled the Comptroller, acting under the superintendence of the Board of Trade. The Patent Museum (an institution which is capable of great development, and should be better known) is to be transferred to the Science and Art Department at South Kensington, with power to acquire models of inventions on payment. In the second place, the initial fee on application for a patent is reduced from 25*l.* to 4*l.*, whilst the limit of time for paying the next amount (50*l.*) is extended from three to four years. The payment of 100*l.* before the expiration of the seventh year of the patent, and the duration of patents themselves for fourteen years, continue as heretofore. The promoters of the Bill are at great pains to demonstrate that under the existing practice an intending patentee or his agent is compelled to apply in person at the Patent Office seven times at the very least, to make four separate payments, and to use four documents for the application. These rests are so far lessened that he would now have to call but twice at the office, to use three documents, and to make but two payments. Moreover, he might transact all his business by post, thus avoiding both personal attendance or the outlay of agency charges. A corresponding simplification is indicated to follow in the clerical labour within the office. In the third place, each application for a patent is to be submitted to an examiner,—from whom lies an appeal to one of the law officers of the Crown,—who is to ascertain and report to the Comptroller whether (*a*) the invention is subject matter for a patent; and (*b*) the nature of the invention has been fairly described, and the application, specification, and drawings (where any) have been prepared in the prescribed manner. Somewhat like to one in that which we may refer to as the Society of Arts Bill, this clause will probably evoke much discussion. The words "subject matter of a patent" are of wide import; they could be construed as extending to questions of title or vested interests, in regard to which, however, there is no other, if here expressed, mention in the Government Bill. The Board of Trade further are enabled, on certain conditions arising, to enforce the granting of licences on such terms as to the amount of royalties, security for payment, or otherwise, as they may under the particular circumstances deem just. Other new provisions include the enlargement of time for discharge of fees due or their renewal, the publication of an illustrated journal of patented inventions, the substitution of a Patent Office seal for the wafer seal which lately replaced the Great Seal, and the erection, should they be found necessary, of new offices for the Comptroller, his examiners, and remaining staff.

The classification of designs as being either "useful" or "ornamental," it is proposed to discontinue. "Any novel design, in the proper sense of the word," will be taken, though such as embrace a mechanical action would be treated as subject matter for a patent. Additional facilities are furnished for the registering of designs, their provisional registration being abolished, and the authorities omit, as considered unnecessary, the existing power to register works of sculpture. Power is taken to establish at Manchester an office for the deposit of specimens of designs for cotton prints and the like. The various current terms of copyright in registered designs it is contemplated to level to one uniform period of four years. The tedious and sometimes vexatious course of registering trade-marks will be greatly relieved, whereas the amended definition of what a trade mark lawfully consists of admits many marks, special and distinctive words, brands, and letters, which are yet excluded from the register. The process of registering Sheffield corporate marks as assigned by the Cutlers' Company in Hallamshire from a time reaching as far back as the reign of King James I., is assimilated by this Bill with the method that will obtain in London. Penalties, by fine, will be incurred by persons who shall falsely represent, by whatsoever means, the articles they sell to be patented.

No small stir may be expected to ensue and considerable ingenuity to be exercised to evade it should that clause pass which enacts that a fine (not exceeding 20*l.*) shall be levied on summary conviction upon anybody who, without due authority, assumes or uses in connexion with his trade or business the Royal Arms or any arms so nearly resembling them as to be calculated to deceive!

SCHLOSS NEU-SCHWANENSTEIN.

IT was towards the close of the autumn of last year that this new castle or palace of the Hermit-King, Louis of Bavaria, was completed. In harmony with the retiring disposition of its royal master, it stands in lonely grandeur in a wild and remote mountain district. Standing on the lofty rocky height called the Tegelberg, this new retreat of the Bavarian monarch faces the proud castle of Hohenschwangau, built by the late King Max. King Louis for the first time took up his quarters in the new palace, which is one of the largest and grandest royal residences on the Continent, on November 10th last, and it was here that he received from Venice the intelligence of the death of his favourite musician, Richard Wagner. The architecture is of the pure Italian style. The edifice is six stories high. It has numerous balconies and corner-towers, and is very rich in ornamentation. The building material employed in the construction is granite. From the centre rises a tower, 110 ft. high, with two beautiful verandahs, and here King Louis is fond of sitting and enjoying the grand outlook over the lofty table-land of Bavaria. The roof of the castle is covered with copper, intersected with gilt plates. The courtyard is of great extent, and every part is beautifully finished, the masonry-work being executed with exceptional excellence. The portal is majestic, fully in keeping with the whole style of the building. The front of the right wing of the palace is adorned with two frescos, each 12 mètres in height. They are works of great value, and their brilliant colouring is very effective. The subject of one of them is St. George, who is represented as a knight on horseback, fighting with the dragon. The other is a picture of the Virgin Mary, with infant, as the protectress of Bavaria. The summit of the right wing is adorned with a bronze statue of a herald, attired in ancient armour. He holds the Bavarian standard in his hand, and is gazing heavenwards. The corresponding point in the left wing shows the bronze figure of the watchful lion of Bavaria. The entire edifice is adorned with numberless double columns and statues, and in general appearance it most nearly resembles a Genoese palace. The apartments of the interior in their lavish luxury outstrip the boldest flights of the imagination. Amongst their decorations are masterly frescos, the subjects of some of which are taken from

Wagner's "Nibelungen," and "Parsifal"; others represent the chief warlike events of the years 1870 and 1871, particularly the actions in which the Bavarian contingent took a leading part; another section is devoted to the history of the kings of Bavaria, from 1806 to 1867. The ceilings are extraordinarily rich in decoration. The floors are partly mosaic, partly inlaid work, harmoniously carried out.

The king's favourite apartments are on the sixth floor, and in these he passes most of his time. There he has his library and sitting-room, his bedroom and the reception-room in which his ministers make their daily reports to his majesty. The king's sitting or work room is embellished with the portraits of his parents and of the men he most admires, including Herren Richard Wagner, August Heigl, Von Tann, and Lutz. There is also a picture from Wagner's "Rheingold," and a plan of the Liederhof. It was while sitting in this room that the king received the news of Wagner's sudden decease. The rooms on the fourth and fifth stories are dedicated partly to the king's extensive library, and partly to his collections of coins, arms, and other objects illustrative of history. The first story is a grand, richly-gilded hall, into which the stairs debouch. The entire palace is lighted with the electric light, the Jablockoff system being used in the court-yard, while in the interior the Edison and Swan systems are employed. The stables of the palace are also adorned with frescoes, being imaginary pictures of the world before the flood. Standing near the stately and charmingly situated pile of Hohenschwangau, the Bavarian sovereign's new residence may be seen from a distance far and wide, and at once captivates the spectator. Hohenschwangau and Neu-schwanenstein, the former built by King Louis's father, the latter by the present king, are among the many eloquent illustrations of the very uncommon taste of the Bavarian sovereigns in matters of architecture and the fine arts.

ST. MARK'S, VENICE.

THIS pamphlet* is an elaborate defence drawn up by the Venetian architect, Saccardo, at the request of the Conservators of the Basilica of St. Mark, of the works of "restoration" carried on about that building. It is chiefly directed against the authors of a pamphlet, "The Future of our Public Buildings," published in Venice last year (noticed in the *Builder*, vol. xliii., p. 390), but is really intended to refute the allegations of the English St. Mark's Committee, and copies of the pamphlet have been sent to the principal members of that Committee and of the Society for the Protection of Ancient Buildings.

The Conservators state that they have abandoned the system of letting out the work to contract, and have engaged a clerk of works to superintend the building operations. They further state that the works have been done in strict conformity with the regulations issued by the Government.

A copy of the reply of the Prefect of Venice to the memorial presented by a committee of artists in the course of last year is printed on pp. 13, 14, and 15 of the pamphlet.

* La Basilica di S. Marco in Venezia nel suo passato e nel suo avvenire. Venice. 1883.

THE SWISS NATIONAL EXHIBITION AT ZURICH.

ACCORDING to a statement circulated in the foreign technical press there will be a joint display made at the above exhibition (opening May 1st) of all that appertains to plastic industry. A large pavilion will contain the exhibits and will in itself be an integral part of the display, as various portions of the construction have been contributed by different exhibitors as specimens of their manufactures. The pavilion is about 65 ft. long by 49 ft. wide, thus covering a superficial area of about 3,200 square feet. In height it varies from about 12 ft. 6 in. to 15 ft. 6 in. The execution of the work has been entrusted to Messrs. Chiodera & Tschudy, architects resident in Zurich.

The principal façade consists of red, white and coloured facing bricks, and is decorated with building ornaments. The entrance, constructed by Messrs. Bodmer & Biber, of Zurich, consists of three semicircular arches with an effective frontispiece. Facing the river Limmat is a portal with two towers, built by Herr von Planta. The towers contain stairs leading to a platform which surrounds the building. From this elevated promenade it will be possible to examine the various descriptions of tiles used in the roofing of the pavilion. These will include, it is said, ordinary roofing-tiles, glazed tiles, gable-tiles, crownings, &c., which are in most cases special objects of exhibition. An excellent view of the exhibition and its surroundings will also be obtainable from the platform.

It is also contemplated to use this platform for showing the less ornamental productions of brick and cement manufacturers. The Swiss makers of these articles express their confidence that a fair comparison will show that the native industry of this kind is quite able to supply the wants of Switzerland without recourse being had to the importation of foreign articles.

In the vestibule of the open court, situated in the centre of the building, will be a number of building ornaments, as well as pipes, works in marble, flooring tiles, &c. In the adjoining park there are to be many objects of interest to the building trade, such as cement constructions, pillars, bridges, fountains, syphons, mosaic pavement, ornamental statues, &c. The interior of the building is to be devoted to a comprehensive exhibition of Swiss pottery, the idea being to group together all the various exhibits in any way connected with the application of various earths, &c., to industrial uses.

PRINCIPAL ENTRANCE OF THE CHURCH OF SANTA TERESA AVILA, SPAIN.

THIS remarkable temple-fortress forms an integral part of the *enceinte* of the city; all its colossal features show that the Cathedral of Avila was as much a castle in the troubled times of the Middle Ages as a Christian church. It was erected in the reign of the King-conqueror Don Alfonso VI. The first architect was Alvar Garcia, a native of Estella. He commenced the work in 1091, and the church was consecrated ten years later. The church has three entrances: the north-western door, of the original building; the northern entrance, of grand dimensions, with reliefs and statuary of great merit; and the south-eastern portal (represented in the engraving issued with this week's *Builder*), executed in a fine white stone, which forms an agreeable contrast to the sombre colour of the granite which forms the mass of the building.

ST. PANCRAS WORKHOUSE EXTENSION.

IN our review of the competitive designs submitted for this important work a short time ago, we described, so far as the limits of our space allowed us, the general character of the several schemes. We have since published the selected design by Mr. H. Bridgman, and we give in our present number a perspective view which formed one of Messrs. J. Saville & Son's set of drawings, and was executed by Mr. Harold Oakley. We do not propose, further than is necessary to explain the more prominent features of the group of buildings represented in our illustration, to enter into particulars as to the general arrangement of the plan. The one-storied wedge-shaped block in the fore part of the view was intended for the reception of probationary paupers, and was planned in the form shown, and kept low, in order to utilise, as far as possible, the vacant space in front of the main building, without damaging the light and prospect which that building has hitherto enjoyed. The main building, as it now stands, is three stories in height, the lowest of which is almost entirely below the level of the ground. The authors of the design under notice proposed to remove the earth in front so as to give the building the advantage of its full height, and, at the same time, to improve the lighting and ventilation of the basement story. An extra story was also proposed to be added, and the original structure made to harmonise with the architectural character of the new erections, by finishing the central and flank projections with gables at the top, and turning segment arches over the old flat-headed windows. With the exception of the water tower in the centre of the site, and the dining-rooms and kitchen buildings in the rear, the buildings were intended to be nearly all new. The schools form two separate buildings situated at either end of the main buildings The chapel is centrally placed just behind the main building, to which it is joined by two short corridors. The large four-storied blocks running parallel to the front building, and next the two side boundaries of the site, contain the greater part of the new wards, and are connected on the ground-floor by a continuous corridor. The two rearmost of these blocks are appropriated for the male and female infirmaries, which are thus removed as far as possible from the rest of the workhouse buildings. The laundry and the numerous offices belonging to it abut the back extremity of the site, and the large chimney-shaft of the engine-house stands in the centre of a tower containing the principal staircase of the laundry building, and was designed to carry the water-tanks for the laundry supply. The plan provides accommodation for 2,250 inmates, and the cost of carrying it out was estimated at 90,000*l*.

THE BIRMINGHAM COFFEE-HOUSE COMPANY'S SHOPS.

WE give a view of the Birmingham Coffee-house Company's Shops and Offices, now erecting in Corporation-street, Birmingham, Mr. William Doubleday, architect. The design was selected in a limited competition of seven firms of this town. Mr. Moffat is the builder, and the contract is under 8,000*l*. The material is Corsham Down stone; the columns and piers on the ground-floor being of Aberdeen granite. Messrs. J. M. Carr & Co. are the stonemasons. The internal work will be designed by Mr. J. P. Osborne.

The company has already twenty houses in operation, and pays a dividend of 10 per cent., besides giving bonuses to their *employés*, 338*l*. last year, distributed in proportion to their wages. The chairman of the directors is the present Mayor, Mr. William White. The amount received from sales last year was over 36,000*l*. The motive of the promoters of the company was philanthropic, but worked out on strictly commercial lines; and its success should encourage similar efforts to forword the well-being of the working-class of our large towns, without unduly "patronising" them, a mistake which has been fatal to many well-meant movements in this direction.

RESIDENCE FOR DR. STAFFORD, WINDLESHAM.

THE villa residence which we illustrate is being erected from the designs of Messrs. Byrne & Wilmot, of 303, Strand, and Windsor, who are also carrying out in the same neighbourhood two other residences of the same class and style, for Mr. J. Pither. The site of Dr. Stafford's house is situated on the Surrey hills, between Sunningdale Station, South-Western Railway, and Bagshot, a locality which is becoming a favourite health resort for those requiring pure air, beautiful scenery, and pleasant social surroundings.

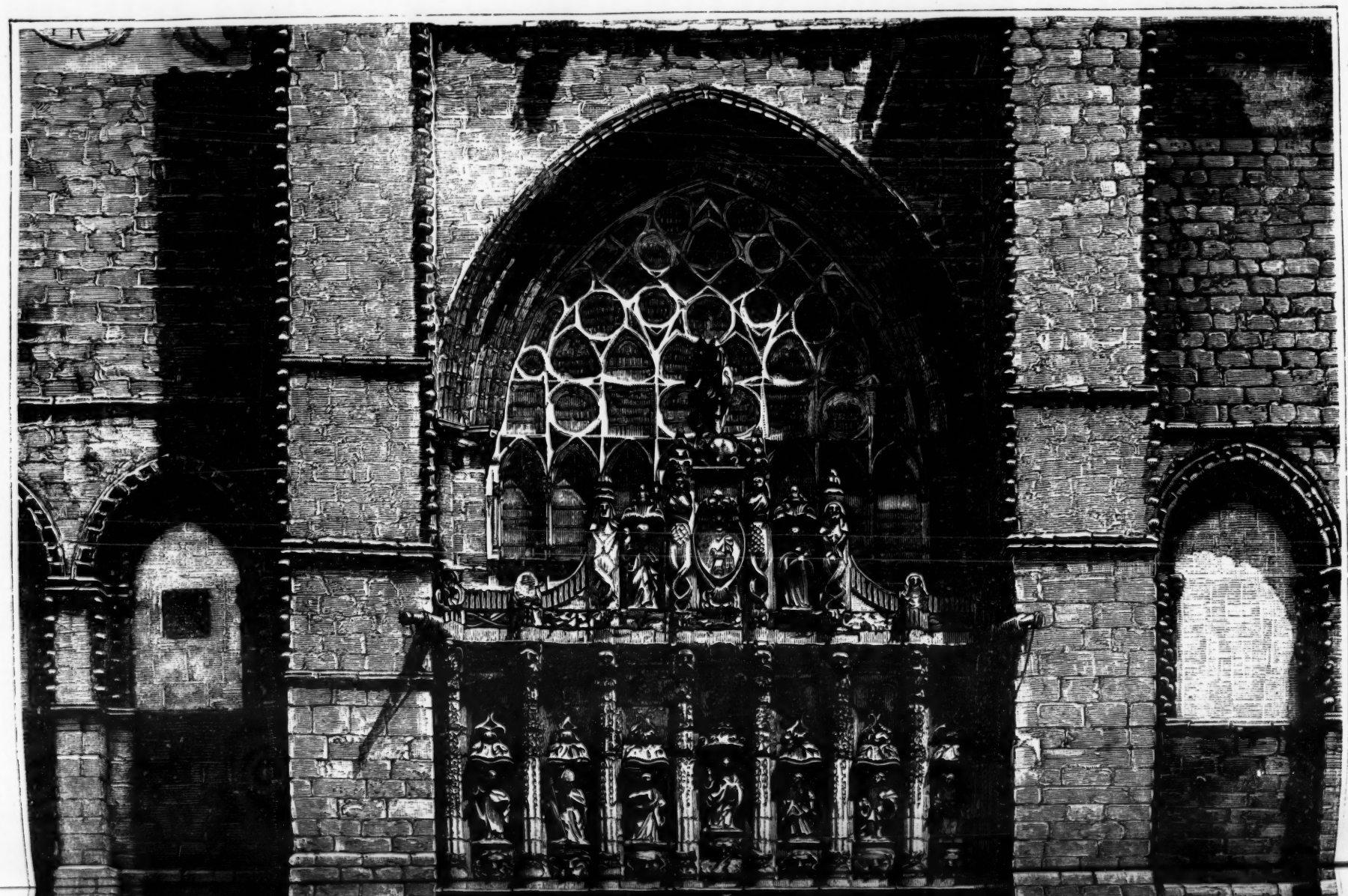
The house is being built of kiln-burnt red bricks, black pointed, with tiled roof, and weather-tiled upper stories, from the Bracknell Brick and Tile Company.

The attics will be of half-timber work and rough-cast. A sparing use of Brown's terra-cotta panels and tile strings will be introduced in the entrance front.

The porch, verandah, bath, and hearths are to be laid with Minton Hollins's glazed ornamental tiles; Arrowsmith's parquet flooring being used in the hall, which is to be lighted by a large stained-glass window. The stairs, cornices, and panelling in the dining-room and study ceilings will be carried out in pitch pine, which will be varnished, as well as all other internal woodwork; ample provision is made for hard and soft water in the tower over the entrance-porch.

The contract for the house, exclusive of stoves, chimneypieces, and tile hearths, was taken by Mr. J. Higgs, of Dorset-square, London, for the sum of 1,977*l*. The lodge and additional stabling, which are exclusive of the above, will be carried out according to a schedule of prices, based on the contract for the house.

A large New Clock has just been erected in Roby Church, near Liverpool, showing time on two 5 ft. 6 in. copper dials, and striking hours upon a 15-cwt. bell. Messrs. John Smith & Sons, Midland Clock Works, Derby, carried out the work.



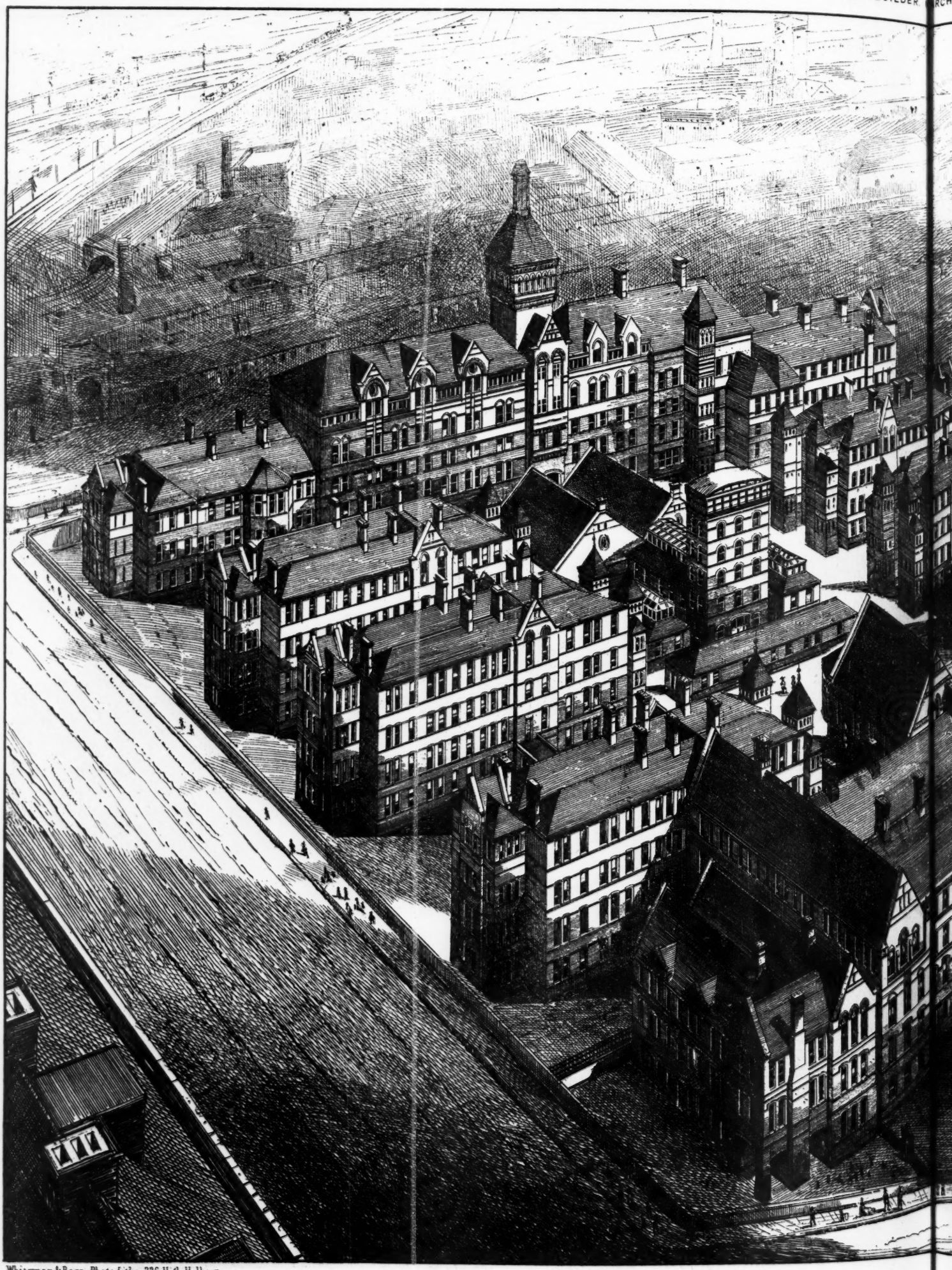
PRINCIPAL ENTRANCE OF THE CHURCH OF SANTA TERESA, AVILA, SPAIN

SHOPS & OFFICES
COFFEE-HOUSE
COMPANY
CORPORATION
STREET
B'HAM

for the BIRMINGHAM
designed & drawn by
WM: DOUBLEDAY
ARCHITECT
Colmore Row
1882

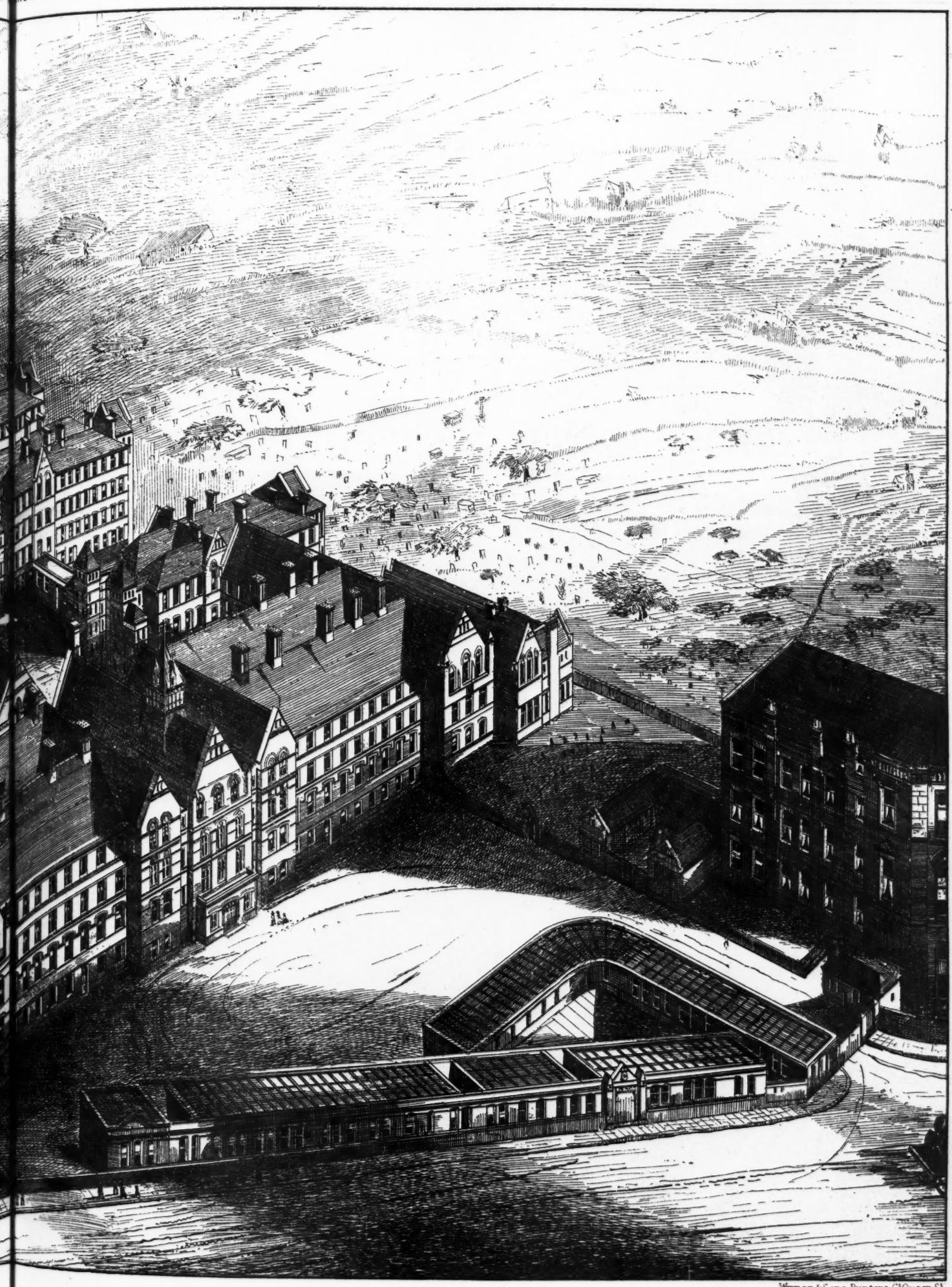
C.F.Kell, Photo-Litho. Castle St Holborn, London, E.C.

Wyman & Sons, Printers, Gt Queen St



Whiteman & Bass, *Photo-Litho* 236, High Holborn

COMPETITIVE DESIGN FOR SAINT PANCRAS WORKHOUSE EXTEN



Wyman & Sons, Printers, Gt Queen St.

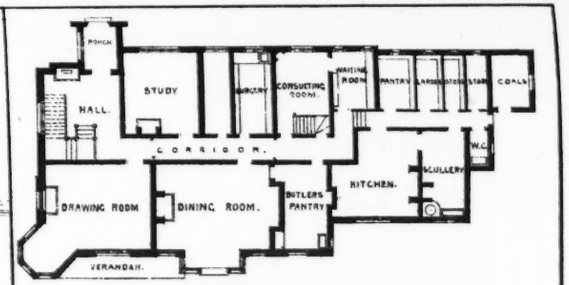
TENSION.—SUBMITTED BY MESSRS. J. SAVILLE & SON, ARCHITECTS.

Residence for Dr Stafford

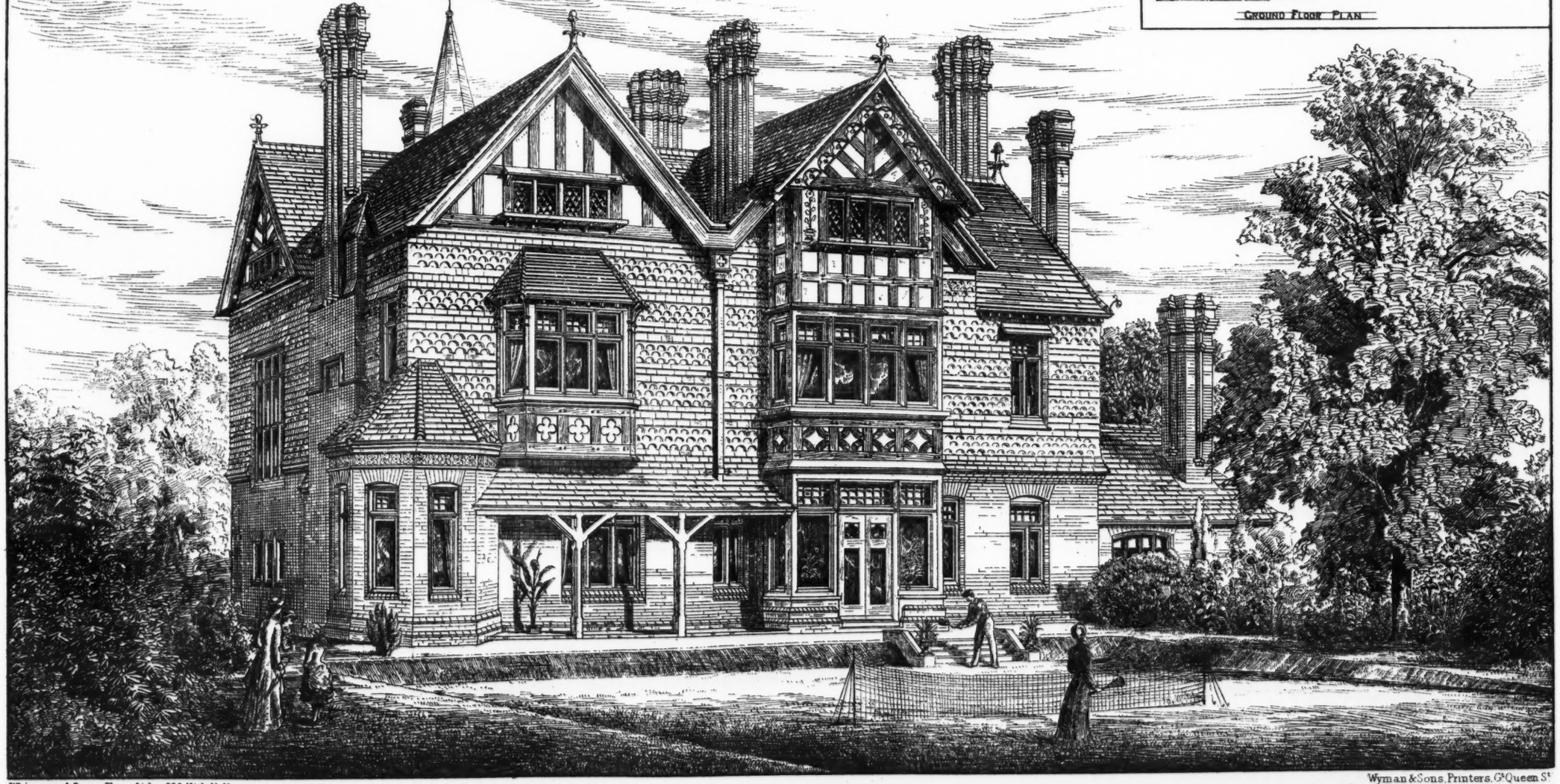
Windlesham Surrey

P. J. Byrne A.R.I.B.A. } Architects
J. G. Wilmot }

303 STRAND AND WINDSOR



GROUND FLOOR PLAN



Whiteman & Bass, *Photo-Litho* 236, High Holborn

Wyman & Sons, Printers, Gt Queen St.

THE HISTORICAL DEVELOPMENT OF ORNAMENTAL ART.*

THE second of a series of lectures on this subject was delivered to a numerous audience in the Hall of the Painter-Stainers' Company by Dr. Zerffi, F.R.S.L., on Friday evening, the 2nd inst. Among those present on the platform were the Master, Mr. W. F. London; the Upper Warden, Mr. J. D. Crace; Messrs. W. Nicholson, Mence-Smith, H. Heal, W. Lutwyche; and Past-Master J. G. Crace, by whom the lecturer was briefly introduced.

Dr. Zerffi began by again craving indulgence for the limited time in which he had to go over the broad field of art and its history, and said he would only endeavour to give broad outlines showing the distinctions of art at different periods, and the causes that produced these distinctions. Roman art, at its climax, under the last of the emperors, produced magnificent buildings and ornamentation that called forth the wonder and admiration of the world. But Roman ornament was too diffuse, it had no repose: if you tone it down, or do half as much as they did, you will be nearer right. It was exaggeration, reflected in all their art products: the Colisseum, the Pantheon, the Arch of Titus, and that extraordinary Trajan column, 120 ft. high, with a ribbon running round it, having no fewer than 1,470 human figures on it, many of which could never be seen. This was not art, but boasting; not the art of people who loved art for its own sake, it was the art of *parvenus* that wanted art because other people had it. For such some grand monumental work might be possible, but the fine taste is altogether neglected. Christ appeared, and with the spread of his Gospel began the great revolution which overthrew the sway of Roman art. His gospel taught the early Christians in the catacombs they were somebodies; man, sunk into his own self, considered more his own subjectivity. Art for the time became secondary, the symbol the primary consideration; and the little cross scratched on the tomb became hallowed and made grand by its symbolic meaning, not beautiful but sacred. Later on we shall see in the development of this symbolism the spirit that produced the grand Gothic temples where every carved animal and flower had its symbolic meaning. It is most important that we should be taught the meaning of all symbols, because in symbols you can express whatever you like. Coming to the fourth century, the Christians began to have admirable churches, either by adapting Greek temples, or by buildings where the main features were still Classic, flat roofs, and Corinthian columns, until in the Byzantine art we come to have temples showing by their grandeur that Christianity had become the State religion. The Church of St. Sophia dazzled the beholder by the brilliancy of its gilding, numerous single figures (groups being forbidden in the Eastern church) being painted on its gilt roofs, and one in each of the triangular divisions of the cupola; immensely imposing, but the whole a mistake. You enter without knowing whether it is the middle or the end you are entering at; circles, half circles, squares, all muddled up, and each part makes small and detached impressions; one niche, and then another niche, each creating admiration, but without any grand plan. We will not learn that this is a great mistake; everything is divided with us; we fail to have a noble and general plan.

In the Romanesque we have a great improvement, as at Ravenna; one dome and one arch, the idealisation of the catholicism of Christianity. Taste and knowledge increased, and with this increase the buildings improved, becoming simpler and grander, and we find them beginning to be symmetrically grouped.

Concurrently was the counter-action of Mahommedanism developing itself in the East. Similar to our war against the so-called idolatry of the Romanists, the Mahommedans could not think human beings could be surrounded with all these pictures and images without worshipping them. The first injunction of the Koran is, "You are not allowed to make the image of any living thing that ever God created." Where this was the law there was an end to all drawing of human beings. Down to our own times no portrait was ever painted among them but by Europeans, and until very lately even photo's were forbidden. The punishment for breaking this injunction of the Koran was a terrible one. Any one who will make any image of anything God has created will carry the monster so made on his back through all eternity. Imagine our artists carrying all their works on their backs, — Whistler with his arrangements in yellow and white, his nocturnes, and so-called symphonies! Under such restrictions no art could be thought possible, but men will not live in whitewashed houses, nor worship in whitewashed temples. The Koran did not forbid the use of geometrical forms nor colour, and, shut out from the representation of anything in nature, they so concentrated their attention to the combination of geometrical forms and harmonious colouring, producing such grand results that we owe to them our best examples and teaching in the use of applied colour. Colour is that which enlivens the whole of our surroundings, and gives to the morning and the evening sky their greatest charm. Not the colour of the modern ladies, with their dull neutral tints, and one single central sunflower; no Mahommedan ever put the sunflower up as a mark of taste. They used colour geometrically. They found colour divisible into certain proportions of blue, red, and yellow, and dividing the surface to be decorated into so many parts, and using the primary colours in an inverse ratio to which they found them, they made each predominate as so many parts of the surface. Their ornamentation, like their colouring, is geometrical. No real Turkish carpet has in it anything actually copied from nature. It is like and yet unlike, a flower and not a flower, and all coloured on a mathematical basis. You must always remember this basis of proportion to understand the wonderful power of bringing harmony into all their work. Not that we must slavishly copy their work for our use. Perhaps in a wealthy gentleman's smoking-room we may reproduce their decoration and style,—it is fitting there. In our structures we want the spirit of our modern times. The more we go on copying, the more anachronisms we are guilty of. We want to do justice to our foggy climate. With their beautiful atmosphere and bright sky, they had need of repose and shade. We with our dull sky outward make our rooms dull where they should be bright. They delight in dark colours, because their bright climate dazzles them, and they require this counter-action in their interiors. We want the counter-action of light bright colouring. They make little windows where the sun shines in on the fountain, always a feature in their interiors, and you cannot imagine how beautiful some of these little fountains are, or the delight to be experienced sitting in the shade and seeing the sun shining on the tiny riplets of the basin. They generally sing while weaving, changing the time as they weave in different p tterns; no wonder they produce woven harmonies. The lecturer glanced at the fact that modern thought was slackening the rigour of the interpretation of the Koran,—as witnessed at St. Sophia,—where they had begun to remove the whitewash that covered up the so-called idolatrous Christian art-work; and at the connexion between the Celtic geometrical art-work and that of the Mahommedan, from which the former was all derived (except the head of the imp or saint which the Celt added); and how much all glass ornamentation owed to the same source. While we in the north-west of Europe had been plunged for centuries in theological controversies, the Arabs had been progressing in art and science. They had no religious discussion. They had but one God, Allah, and Mahomet was his prophet. We owe much to the Arabs. We write our ledgers in the Arabic character; geography we owe to them, and the real genuine principle of ornament. The Alhambra, with its beautiful stalactite roof, perhaps produced a feeling of peaceful pleasure unsurpassed. You can only have such buildings in hot countries. We want flat roofs, as light and as bright as possible. We, in the north-west of Europe, inured and hardened by the climate, have done great things in whatever we have pursued, and when we clearly understand what our art wants are we may hope we shall produce art work worthy of a famous people.

With the growth of Christianity, through a mixture of Christian and Byzantine, we come to Gothic art. Without knowing and well understanding the way of thinking that produced the art, we can never realise what that art is. The Gothic church was to be a temple in which all creation was to be represented. In the Greek temple we had the representation of the God present, the shrine, the place where he was; but in the Gothic church you had the invisible God. God was everywhere; and you could only represent his universality by everything that was his work. In the cathedral at Chartres there were 2,500 busts and statuary: everywhere symbols; the arrow representing swiftness; the eagle, intellect; the monkey, mischief; the butterfly, immortality; the dog, fidelity; the dove, love; the bull, strength; the pomegranate or pine cone the mystery of the creation; all carved everywhere; every flower, every rose and lily taught us symbolically some kind of truth. The origin of the plans for the grand Gothic temples is shrouded in mystery. Their origin was in the cloisters. Legend ascribes many of them to Diabolus himself. The cathedral at Cologne,—that magnificent structure, which, when you enter, be your religious ideas what they may, cannot fail to draw your heart out and lift it up to the Creator; legend tells us that the unknown architect of this building, striving to make a plan excelling all others, is said to have thought he would give his soul if he could only have the wanted plan. Diabolus immediately appeared and staggered the architect so much that he asked for twenty-four hours to consider; which, being granted, he consulted his father confessor, who gave him a piece of a saint's bone, and instructed him that when Diabolus presented himself he was to seize the plan, and the holy relic would protect him from reprisal. So Diabolus was cheated out of the plan; but as a punishment he vowed the architect's name would never be known, and the building would never be finished. The architect's name is unknown, and now only is the building finished, thanks to the broad-spirited generosity of a Protestant emperor.

Referring to a diagram showing certain of the corbels from Poictiers, and what they meant, their remarkable freethought,—here was a bishop whose conduct had not been right, hung up for ages to tell his own shortcomings; a second to show his gluttony. No ornamentist can be a man who knows nothing; this third figure represents a musician, and most musicians are one-sided people that can understand nothing but music; a fourth that represents admirably a backbiter, where two ravens are picking his tongue till domesday. This was working not simply to ornament, but every ornament had a meaning and a sentiment, without which it was dead. You want to know iconography and iconology: when you know the meaning of these you might compose nice little poems in your ornamentation. That we have improved very much in late years, I am sure. Mr. Crace does not think we have improved so much as we ought to have done. We must not forget the influence of the 220 years in which we were Puritans. It was quite recently a reproach to have ornamental surroundings. It is not so long since all your places of business in this city were holes in which no respectable butcher would care to enter now. Stability in business was only deemed compatible with dusty, dark dens for offices. We must not forget the advantages art has found on the Continent it has failed to find here. The best men were sought out and protected by the Popes themselves, to study art and everything that would aid it. We shut our museums and galleries at the only times most of you can go to see them. You work with heart and soul, but it is mechanical. What is wanting is the brain,—the thought. Give you anything to copy, and you do it admirably; but ask you to design anything, however small, and you stumble; you are not used to that; you do not know what to do. There is a different method on the Continent. The child, even, of ten years old, when it has drawn a simple flower, say a forget-me-not, and knows the form, has the flower taken away from it, and is put to draw,—to *design*,—a wreath of forget-me-nots for the brim of a plate, and a cluster for the centre. Here your fine ladies and gentlemen get in front of a beautiful bouquet, and paint and copy carefully, like the Chinaman, all copy, no invention, no design. You want to *think* in the forms you are to use as ornamental forms.

A. B.

* See p. 291, *ante*.

Sanitary Institute.—The autumnal congress of this Institute will be held this year in Glasgow from September 25th to the 29th. The Exhibition of Sanitary Apparatus and Domestic Appliances in connexion with the congress will remain open until October 20th.

NOTES FROM BIRMINGHAM.

SIR,—Jupiter Pluvius has sustained his reputation during the early days of the present year in the capital of the Midlands. Mr. Plant, of Moseley, tells us that his records show that during the month of January and the first eighteen days of February no less than 8·64 in. of rain fell in Birmingham, equal to the enormous amount of 864 tons to the acre. The pursuit of agriculture under such conditions was impossible. Since the 18th ult. no rain worth mentioning has fallen, and the soil is now resuming its more normal condition. It is generally believed that the autumn-sown wheat is a total loss.

A very elaborate set of baths has recently been completed in the Monument-road, at a cost to the Corporation of some 30,000*l*. This set of baths is the largest and most complete of any of the four sets of public baths belonging to the town, and comprises first and second class swimming-baths, first and second class private warm and cold baths, with shower baths if required, and first and second class Turkish or hot-air baths. The swimming-baths are the special feature to which attention has been directed, and are of large dimensions, and lined with white glazed bricks throughout. The charges for them are 6d. and 3d. each person, but on two mornings each week the second-class bath at each establishment is reserved for school children of both sexes, who are admitted in charge of their teachers at a nominal charge of ½d. each. A Leander club devotes much of its time to teaching any of the frequenters of the baths who desire to learn swimming. The charges for private baths are :—

1st class warm,	with shower.....	6d.
,, cold	,, ,, ...	3d.
2nd class warm	,, ,, ...	3d.
,, cold	,, ,, ...	1d.

For the Turkish baths the charges are :—

1st class (including shampooing)...		1s. 0d.
2nd class	,, ,, ...	0s. 6d.

These charges are very low, and the baths are much used.

Since the baths were established by the Corporation, now many years ago, a profit and loss account has been kept, and this shows that at the very low charges stated, and after paying all expenses, these establishments have been nearly self-supporting. The new buildings are very substantial, and have their own water supply from an artesian well, and a lofty chimney, with steam-engine and boilers. The elevation towards Monument-road is *very* Gothic, in brick and terra cotta, and the roofs are covered with red tiles.

A new theatre, begun some time ago by a Birmingham builder, who failed, has been recently let to a Wolverhampton builder to finish for some 25,000*l*., who has agreed to get the same completed by the fall of the year. It will have a frontage to Old-square.

A continuation of the Great Western Arcade from Temple-row to Corporation-street is now in progress, covering in a great part of its length the tunnel of the Great Western Railway. The building will be carried over the tunnel on girders resting on piers carried down to the railway level, and will cost some 25,000*l*.

The remains of the old Stork Hotel, at the bottom of the Minories, and fronting Old-square, have been pulled down, and a new building is being erected as a warehouse for a woollen firm, who have employed a Dewsbury firm of architects and a Sheffield builder to execute their work. The contract was tendered for by several Birmingham firms, and although it is notorious that contracts have been taken here at less than cost price for some time past, the local men failed in securing it.

As an instance of the above fact, it may be stated that at a meeting of the creditors of one of three builders and contractors of this town, who have failed in as many months, held on the 5th inst., the trustee reported that he began in 1876 with a capital of 500*l*., and that up to March, 1881, the debtor had made a small profit; but that since that time his losses on contracts had amounted to 8,508*l*., or nearly 400*l*. per month, and offering a composition of 5s. in the pound on liabilities amounting to nearly 15,000*l*., payable during fifteen months, which was accepted. When will builders' merchants learn wisdom? They have been punished fearfully of late, but they have the remedy in their own hands.

The new branch Free Public Library in Constitution Hill is slowly approaching completion, and will be open to the public shortly. The old building in which the library has been held was closed some time ago, and during the past winter the Northwood-street Swimming-bath has been utilised as a library and reading-room. The various libraries belonging to the Corporation here are well appreciated. Recently a proposal was made by the committee to remove one held in the Steward-street Board School in the evenings only to another Board school at a mile distant; but so much opposition was raised to the proposal, that the committee have withdrawn it, and will now have to maintain the two. If the new Consolidation Bill now before Parliament passes without alteration, the Town Council will have no limit to their power to tax the inhabitants for Free Library purposes, and we shall, no doubt, have a large increase in the number of these branch establishments throughout the town.

Owing to the failure of the contractor, the new Eye Hospital, in course of erection in Church-street and Edmund-street, to cost some 15,000*l*., is not progressing. When this building is complete, it is intended to vacate the present building, which originally formed part of the Royal Hotel in Temple-row, and an opportunity will present itself for restoring the hotel to its former dimensions.

Some time ago a committee was formed to consider and recommend some method of marking the appreciation of the inhabitants of Birmingham of the eminent services rendered to the town and country by its very distinguished representative in Parliament, Mr. John Bright. The committee recommended a statue, and in deference to a wish expressed by Mr. Bright, has placed the commission in the hands of Mr. Bruce Joy.

A new coffee hotel, of a costly character, with frontages to Corporation-street and to Cherry-street, in Bath stone, in a good substantial Gothic style, is rising up towards its roof.

The committee of the "Old Meeting" Chapel, now pulled down for the extension of New-street Railway Station, has bought a corner plot of land and houses on the east side of the Bristol-road. The houses are cleared away, and a new large and costly chapel is shortly to be erected there to accommodate the congregation, which till then has its temporary services in the Masonic Hall.

The new street recently made by the Corporation, in continuation of the Bristol-road towards New-street Station, and named John Bright-street, has let daylight into one of the vilest quarters of the town. The new frontages thus created are being rapidly appropriated, and a number of substantial shops and buildings above are in course of erection. A very large and substantial building in the Gothic style is being erected in Smallbrook-street, and is rising up towards the roof.

The selected works of the pupils of the local School of Art, executed during the past year, have recently been exhibited to the public at the rooms of the Society of Artists, and fully sustained my former criticism. The few works in sculpture and modelling shown were only very third-rate, and quite unworthy the town.

E. G.

Payment of Wages in Public-houses Prohibition Bill.—In the House of Lords, on the 16th inst., on the motion that this Bill be read a third time, Lord Bramwell called attention to the fact that the preamble was inconsistent with the clauses, because the preamble said it was desirable that certain things should be done which it had been determined not to do. He had suggested to the noble lord in charge of the Bill that the preamble should be struck out, but the noble lord said that if the preamble were struck out the Bill would be gone. It was only as the shortest way of getting out of a difficulty that he made the suggestion. Clause 3 said that wages were not to be paid in a place "contiguous" to a publichouse, so that if a beershop were erected in contiguity to a builder's yard, the builder could not pay the wages there. This might be got over by striking out the word "contiguous." Lord Stanhope said the Bill would not be interpreted by the preamble. The Bill was read the third time. Lord Bramwell moved that the word "contiguous" in the third clause should be omitted. The amendment was agreed to, as was also another amendment to leave out the words in Clause 4 referring to the Summary Jurisdiction Act. The Bill, as amended, then passed.

TELEGRAPHS OF THE ANCIENTS.

FROM THE FALL OF TROY TO THE BATTLE OF WATERLOO.

ON Wednesday evening in last week Mr. Alderman W. H. Bailey delivered a lecture on the above subject at the Museum and Art Gallery in connexion with Peel Park, Salford, Mr. Alderman Bowes in the chair. It was a spirited and instructive composition, and much interested the audience. In the course of it, Mr. Alderman Bailey said,—

We now come to the semaphore signals, which are used even to the present day, chiefly for railway purposes. Probably the most ingenious and among the first of this class of telegraphs was that invented by the brothers Chappe. It appears that this invention is due to the affection entertained by the two brothers for each other. They were placed as students at different schools, a mile and a half apart. They were inconsolable at being thus separated, and, by means of pieces of wood exposed from the back windows of each school, the brothers Chappe contrived to talk to each other. In their first system of telegraphing they arranged a code of signals which enabled them to send 192 different messages, this being done by means of instruments similar to the one I now have on the table. As the ingenious brothers became older, the invention was placed before the Government, and was tried just before the Revolution in 1791. The people, however, looked upon the invention as only another means of increasing the power of the Government and the aristocracy. The introduction of the invention was opposed; the people destroyed the telegraph stations, and the inventors barely escaped with their lives. A second attempt shared the same fate. Again the various telegraph stations were burned to the ground. The brothers Chappe, however, continued their efforts, and in 1793 the Government adopted the system. Circumstances were favourable. The telegraph, having been adopted, was fortunate enough to communicate to Paris the news of a great French victory; and now the brothers Chappe were considered part and parcel of the glories of France. This message was transmitted from the frontier to Paris :—"Condé is taken from the enemy," to which the Directory replied :—"The army of the North deserves the gratitude of the country." These messages ran like an electric shock throughout the Convention and throughout Paris. The once-abused telegraph was now the pride of the nation, and its inventors were worshipped as public benefactors. The system invented by the brothers Chappe soon became universal on the Continent. A line was carried from Paris to Lille, and two minutes only were occupied in transmitting a word. In 1802, the system was adopted in Denmark. Shortly afterwards it was made use of by the Government of Belgium, Sweden, and Germany. Mahomet Ali erected stations on this system from Alexandria to Cairo. The most expensive series of stations was constructed in Russia by the Emperor Nicholas. A line of towers was erected from the German frontier, through Warsaw, to St. Petersburg. This line embraced 220 stations, at each of which were six men, so that 1,320 men were employed on this route, besides those who had charge of the general administration. The erection of these towers cost the Russian Empire millions of pounds sterling. The system was only finished and got to work so comparatively recently as the year 1858; and, after being in operation but a very short period, it was completely superseded by the electric telegraph. The towers are still standing, silent monuments to the ingenuity of the past. Scarcely any description is required of this Chappe semaphore telegraph. The method of manipulating the arms was by means of levers, similar to those now in daily use on our own railways. Occasionally the system was used at night by placing lanterns on the ends of the vanes. Men were stationed along the line of communication with telescopes. And thus, by means of known changes, various codes could be worked at great speed. In France, along the route between Toulon and Paris, a distance of 475 miles, there were 120 stations; and it is said that so complete were the instruments made that over 82,000 different signals could be sent. The Prussian system of semaphore signals, a model of which we have on the table, was introduced in the year 1782. It will be seen that this is but a modification of the French system.

English Semaphores.—Forty thousand signals could be sent by this means. The English semaphore shutters, or louvre telegraphs, were invented by Lord Murray, in 1795. The instrument consists of six shutters working on pivots. Sixty-four distinct signals could be sent by this system from London to Dover in ten minutes. These were placed along the coast, leading to stations inland, and were in general use in this country up to the invention of the electric telegraph. Messages could only be sent in the day time by this system. It is mentioned that after one of Wellington's victories over the French, when the news was being sent to London, the sender at the coast end began the signal with the words "Wellington defeated." A dense fog prevented the rest of the message being seen, and the result was great consternation in London and a panic on the Stock Exchange. When the fog cleared up the following day the rest of the message was received, and the message then read,—"Wellington defeated the French." I remember, when I was a boy, this system being used between Holyhead and Liverpool for sending news of the arrival of the American mail. On the vessel being sighted at Holyhead, the news was sent forward right across Anglesey to Puffin Island, thence to the Great Orme's Head, thence right along the Welsh coast to Parkgate, across the mouth of the river Dee, and thence to Liverpool. For many years the intelligence sent in this old-fashioned way from Holyhead to Liverpool, was sent from Liverpool to Manchester by electric telegraph. Many of the old stations on the line of route between Holyhead and Liverpool are still in existence, though their occupation has gone. . . . .

It is not within the scope of the lecture this evening, nor have we time, to consider modern telegraphy. For the present I may be permitted to say that, according to Mr. W. H. Preece, 400 words per minute can now be telegraphed along one wire, as result of the recent improvements of duplex and quadruplex circuits in connexion with automatic instruments. When the telegraph service was taken over by the Government a few years ago, 126,000 messages were sent per week. Now, the weekly number is over 600,000. In Press work the increase is most marked; the rate in this period having risen from 5,000 words per day to nearly 1,000,000; that is to say, 340,000,000 words of press messages having been delivered during last year. England has not a monopoly of this useful agent. All prominent countries exhibit corresponding growth. The Japanese even despatch 200,000 messages a year. The telephone is another wonderful advance in telegraphy. To enable people to speak in actual words, with the accent and exact tone, to their friends miles away, is a splendid scientific triumph. The electric telegraph is one of the great mutually dependent blessings of these modern days. It is powerful in promoting the uses of civil life; it is blessed in strengthening the arts of peace. It gives giant-like strength to man in fighting his ancient enemies,—plague, pestilence, and famine. It sings psalms to the poor, for if in any part of the earth the crops are abundant, the glad tidings of cheap food are proclaimed before the autumn sun makes them ready for the gatherers. It has no sunrise or sunset; it knows no night; for it ever merrily chirps, like Longfellow's birds,—

> 'Tis always morning somewhere, and above
> The awakening continents, from shore to shore,
> Somewhere the birds are singing evermore.

DECORATION OF THE DOME OF ST. PAUL'S.

SIR,—I had no intention when I wrote my last letter to return to this subject, and though I may notice another point or two by the way, I only return to it now to rebut the imputation by your correspondent, "A Painter," of having proposed to "utilise the dome of St. Paul's for the pictorial presentment of the vault of heaven," which would indeed be, what he terms it, an insult to common sense, though some such false treatment of a roof has more than once occurred in modern practice. But if he will really read my letter in the *Builder* of the 3rd inst., he will perceive that such a project exists only in his own imagination.

What I really suggested was the adoption of the principle on which nature has worked in her treatment of the greatest of all domes known to man, the glorious firmament,—not a literal imitation of her celestial dome,—on which there are no circular medallions and arabesques, or prophets and apostles, skirting the horizon, as in my scheme for the decoration of the dome of St. Paul's.

In reference to his depreciation of the hemisphere as a form of dome, which he lightly esteems, because "circular curves were never lines of beauty," let me say: I believe, on the contrary, that the hemisphere is the grandest of all domical forms, because the circle,—of which the sphere is the corollary,—is the simplest of all curves, and that its monotony is essential to its grandeur. Domes may be spherical, ellipsoidal, hyperboloidal, or paraboloidal, and many other shapes; but the most noble and majestic is the spherical. And this must have been the general opinion of the Romans and their Greek architects, since the numerous remains of their domes are nearly all spherical. It may, I think, be considered the typical dome-form: the Italian word *cupola* signifies an hemispherical roof covering a circular building; and the French word *dome*, though from the Latin *domus*,—a house,—has the same meaning. It has probably only been departed from in the erection of modern domes in favour of more elevated vertical sections, through sympathy with the aspiring spirit of the Gothic; as in the domes of the Cathedral of Florence, St. Peter's at Rome, and St. Paul's, which two latter are, as much as the first, Gothic domes. Michelangelo and Wren, though they may have despised the Mediæval piles around them, could not escape their influence.

It is not in the vertical section of a dome that the lines of living movement and growth are best displayed. They must come in the forms introduced by the painter or sculptor on the dome's surface. And though parabolic and hyperbolic curves were introduced by the Greeks into the entasis and mouldings of their columns, there is nothing to induce the belief that they would have figured in the contour of their domes, had they built domes; and they were only prevented building domes, I conceive, by the loss of their national independence. The spherical dome would have perfectly harmonised with their Corinthian order.

But what curves in the concave of the dome of St. Paul's could be duly appreciated under the treatment it has received, and amid the confusion of pilasters, entablatures, and arches which disguise its surface, and render it visually, and virtually, no dome at all, but a sham circular arcade?

If Wren approved of this, which I much doubt, it was one of the greatest mistakes that ever a great architect made; and "A Painter's" expression of the opinion that Thornhill's design is the best that could possibly be devised for the decoration of the dome, is, in my opinion, to use language which he has too hastily used, an insult to common sense.

A word on the Pantheon dome cited by your correspondent. I always thought that the object of the circular aperture or eye therein was simply to admit light; never that it had any relation to want of respect, on the part of the Romans, for unbroken hemisphericity, which is certainly an original idea. If the Romans felt a contempt for hemisphericity, broken or unbroken, why did they cover the magnificent Pantheon and so many of their circular temples with spherical domes?

SAMUEL HUGGINS.

PARTIAL RESTORATION OF AN ANCIENT SCOTTISH CHURCH.

AT the close of the fifteenth century there were eleven places of worship in the town of Peebles. Of all these ancient fabrics the ruins of two only remain. The most ancient ruin is that of the church of St. Andrew, which was founded by Bishop Jocelin, of Glasgow, in 1195, and built out of materials, it is supposed, of a more ancient ecclesiastical fabric which occupied the same site. It was disused as a place of worship and stripped of its relics and revenues at the Reformation, and suffered further degradation in the time of Cromwell. Of the whole edifice, with the exception of a few shapeless remnants of walls, the square western tower alone remains. "The church was burnt and destroyed by England twelve years since or thereby," write the bailies of the town in a letter to the Lords of Secret Council in 1560, in which they request that "the same may in no wise be built at present without long process and great expenses, and that they may have the temporary use of another church as the parish church." The reply of the lords is, "Let it be done as prayed." Some movements had been made towards rebuilding five years previously, for the Burgh Records of 1555 state that "Charles Geddes desires the provost, bailies, &c., to uphold, repair, and build the Geddes aisle," and a few months later, "The Inquest,"—a board of inspectors chosen by the head court of the burgh,—"ordains the bailies and neighbours to pass to the church and sight the same with witty (!) men to see how it may be built, and thereafter to conduce a workman to see the same." It is doubtful whether any rebuilding was carried out. In 1560 came the Reformation. In February, 1561, the municipal authorities ordain "that the goods and property presently within the High Church (St. Andrew's) and the church walls be arrested by the sheriff officer and officiaries of the burgh"; and in a month later, "the inquest ordains the vestments to be 'ropit' [sold by public auction], and the money gotten for them to be distributed to poor householders." Of the "goods and gear" of the archdean of the church (1560), the records contain an inventory. Among the few items are, "two beds wanting the sides next the wall, together with one board at the foot and head of the beds," "one press for earthenware," "one pot," "two sand-bags and an iron chimney." In 1562 the bells are taken away from the tower or steeple, and the timber of the steeple is made into seats for the newly-adopted parish church. Still further degradation follows. In 1609 the Town Council "ordains that if it be possible a dovecot be built upon the High Church Steeple," and in later times the first story of the tower was used as a watch-house by the worthy burghers whose duty it was, between sunset and sunrise, "to guard the dead in the churchyard from the resurrectionists."

This tower is to be restored at the sole charge of Dr. William Chambers, who has entrusted the work to Mr. W. Hay, architect, Edinburgh. Its height in its dilapidated state is 45 ft., its walls are 3½ ft. thick, and it is, and has been, for centuries roofless. It is to be covered with a high roof of stone slabs, with crow-stepped gables. The slits in the tower, which serve for windows, are to be filled in with plate-glass, wooden floors are to be substituted for stone-vaulting, and a new approach to the door will take the place of a rickety wooden staircase. The spot is very dear to Dr. Chambers, for in the churchyard an ancient table-stone marks the burying-place of the Chambers family for several hundred years. Near to this is a stone inscribed,—

> "A silent, scatter'd flock, about they lie,
> Free from all toil, care, grief, fear, and envy."

And this is the summing up of the story of St. Andrew's Church, with its eleven altars, before which royalty had knelt, and masses had been said and sung for a long line of Scottish kings.

THE USE OF SAND AS A FILLING-IN SUBSTANCE.

ATTENTION has recently been given in Germany to the hygienic dangers arising from certain substances being used for the filling in underneath flooring. Herr Lieblein, of Frankfürt, has called attention to the fact that dry sand forms a most suitable filling substance from all points of view. He remarks that the greater weight of this substance than that of others in common use does not form any real obstacle to its introduction, inasmuch as beams of solid construction are quite capable of supporting the weight, and none others should, under any circumstances, be used. In Frankfürt, it would seem that the use of sand as a filling material has been general for many years.*

In writing on the subject to the *Deutsche Bauzeitung*, Herr Lieblein also refers to the question of flooring-boards being placed sufficiently closely together for the penetration of moisture to be effectually prevented. He specially advocates the use of pitch-pine for this purpose, on account of its hardness and resinous properties, and records the fact that his application of that wood to the purpose indicated has proved successful in many instances,

* Dry sand and small shells have been used for this purpose in England. One objection to this material is the ease with which it may all run away.—ED.

while its cost is, he maintains, but little in excess of that of other kinds of flooring.

Another German technical paper has called attention to the advantages of using deal flooring-sleepers impregnated with creosote in place of oak ones. Durability and freedom from rot are ascribed to this kind of sleepers. It is said they do not spread any smell of creosote in the rooms in connexion with which they are used. They are spoken of as being specially applicable to the lower parts of houses built in damp situations, or in which damp has manifested itself.

THE LONGEST AND HIGHEST BRIDGES OF THE WORLD.

THE longest viaduct built of stone in the world is that which connects Venice with the mainland. Its length is 3,598 mètres, or about two miles and a quarter. The longest iron bridges in the world are the following:—Parkersburg Bridge, 2,147 mètres, or one mile and a third; St. Louis Bridge over the Missouri, 1,993 mètres, or about a mile and a quarter; the bridge over the Ohio at Louisville, 1,615 mètres, or about a mile; East River Bridge, New York; Delaware Bridge, Philadelphia, and the Victoria Bridge at Montreal, all these about fifteen hundred mètres; the Volga Bridge at Sysran, 1,485 mètres; and the Moerdyk Bridge in Holland, 1,479 mètres; the five latter all being rather under a mile. The loftiest bridge is in France. It is the Garabit iron bridge, in the department of Cantal, but will not be ready for opening till next year. It stands at such a height that the Vendôme Column on the top of the Cathedral of Notre Dame could stand under it, its height above the valley being 124 mètres, or 406 ft. This is 72 ft. higher than the Kinzu Viaduct in America.

THE PROJECTED IMPERIAL PALACE AT STRASBURG.

A FEW weeks ago we gave some particulars of the projected palace for the German Emperor at Strasburg, and since that time the general question has come before the German Imperial Parliament. On the proposal in the budget to grant the first instalment of 553,200 marks (27,660*l.*) for the commencement of the work, a lively debate arose. There was a strong opposition to some portions of the design of the architect, Herr H. Eggert. That gentleman is an official in the Berlin Ministry of Public Works, and had been selected by the Minister to furnish the design for the Palace, as the Government deemed it expedient not to invoke a public competition. Herr Eggert's building, for which he had furnished only a sketch, and not complete and perfect drawings, is one of three stories, forming an oblong of 68 mètres in length by 48 mètres in depth. In the centre of the façade, between two courts, is the entrance, approached by a noble flight of steps and flanked on either side by colonnades. The steps led up to the principal floor, on which were the dwelling apartments and reception-rooms of their Majesties. On the upper floor were apartments for the Imperial retinue and servants, while on the ground-floor was the kitchen and the offices of the Marshal of the Court. All the floors were to be fireproof. The façade, which was to be built of the grey Vosges sandstone, is in a rather heavy Renaissance style. The site was the west side of the Emperor's Square in the axis of the new University buildings. Of the frontage towards this square the chief motive is an open portico or colonnade crowned with a pediment, and in front, over the covered drive to the chief entrance, stands a deep balcony. Over the reception-hall, on which the loggia opens, rises an ornamental cupola, adorned with the imperial crown. Rich groups of figures, along the centre of the building, and obelisk-like crowns on the corners of the side risalites, were further to adorn the exterior of the edifice. It was specially against this façade that the liveliest opposition was manifested. The Budget Committee had objected to it, but upon the Government explaining that Herr Eggert's design was only a sketch capable of modification, that Committee had withdrawn its opposition on the understanding that the architect would in his matured designs, attend to the objections raised. However, in the full House, the opposition gathered such strength that after two lengthy debates it was ultimately resolved to request the Government to cause the design to be remodelled. The question whether a public competition is to be invited, or whether two or three eminent architects are to be requested to compete, or whether the change is to be made by Herr Eggert alone, is left for the Government to decide. This decision by the Imperial Parliament has caused no little disappointment, as the realisation of the scheme is prevented for another year at least.

ELECTION OF DISTRICT SURVEYORS.

AT the meeting of the Metropolitan Board of Works on the 16th inst., applications were received from candidates for the district surveyorships of Hatcham and Rotherhithe, being the two districts into which the district held by the late Mr. Snooke has been divided by the Board. There were thirty-one candidates (including Mr. Bridgman, whose name was not put to the meeting because it was stated that his letter of application for one of the appointments had not been received). Of the remaining thirty candidates, the names of two (Messrs. F. C. Notley and F. Stone) were struck off on account of their absence.

The following is a list of the candidates whose names were retained, with the number of votes recorded for them in the preliminary voting for each appointment, viz.:—

Name.	Age.*	Hatcham.	Rotherhithe.
Ashbridge, A.	30	26	23
Brooks, C. W.	39	16	15
Cheston, H.	32	7	5
Edmeston, J. S.	38	12	7
Elkington, G., jun.	31	27	21
Ferguson, J. M.	37	6	2
Grellier, W.	35	9	4
Hamilton, J.	38	10	7
Hunter, P.	31	26	23
Inskipp, G.	35	2	2
Jackson, G.	34	5	6
Karslake, L.	38	8	5
Lean, G. A.	37	6	6
Lees, W. H.	39	21	18
McLachlan, H.	31	25	18
Marsland, E.	29	18	21
Mundy, T. E.	38	5	3
Renton, O.	35	0	1
Scrymgour, W. H.	39	19	15
Smallpiece, W.	40	7	6
Spiers, W. L.	34	7	9
Stenning, A. R.	37	31	35
Stevens, W. H.	40	3	3
Stock, H. W.	31	21	18
Street, E.	34	26	24
Tanner, A. W.	39	30	†
Taylor, A. T.	32	6	3
Todd, F.	48	11	15

The subsequent voting was as follows:—

Hatcham.

	Second Vote.	Third Vote.	Fourth Vote.	Fifth Vote.	Final Vote.
Ashbridge	13	—	—	—	—
Elkington	16	14	—	—	—
Hunter	18	18	15	—	—
Stenning	23	23	23	21	16
Street	19	19	17	12	—
Tanner	27	29	28	28	23

Mr. Tanner was therefore the successful candidate for this appointment.

Rotherhithe.

	Second Vote.	Third Vote.	Fourth Vote.	Fifth Vote.	Final Vote.
Ashbridge	22	11	—	—	—
Elkington	18	16	12	—	—
Hunter	26	21	18	19	11
Marsland	17‡	—	—	—	—
Stenning	31	31	30	28	30
Street	17‡	17	13	10	—

Mr. Stenning was thus the successful candidate for this appointment.

Architectural Association.—At the ordinary fortnightly meeting of this Association on the 16th inst., Mr. E. G. Hayes, president, in the chair, the following gentlemen were elected members, viz., Messrs. W. Bamber, L. Dennis, W. S. King, G. McCombie, W. T. Gibbings, G. T. Hellicar, and G. Corderoy. A vote of thanks was passed to Mr. Thos. Verity for permitting the members to visit the Pandora Theatre, Leicester-square, described by us a short time ago. Mr. Walter Emden then read a paper "On Theatres," which we print on preceding pages. A brief discussion ensued, the speakers being the Chairman, Mr. Trubshawe, Mr. Max Clark, Mr. W. H. A. Berry, Mr. Cole, and Mr. Mountford, and a vote of thanks having been accorded to Mr. Emden, that gentleman briefly replied, and the meeting terminated.

* The limit of age fixed by the Board is between twenty-eight and fifty years.

† Elected for Hatcham.

‡ In another vote taken on this tie, the numbers were: Street, 19; Marsland, 14. Mr. Marsland's name was, therefore, dropped.

THE ELEPHANT AND CASTLE THEATRE AND THE BOARD OF WORKS.

PROPOSED STRUCTURAL ALTERATIONS.

THE alterations and works on which the Metropolitan Board of Works are insisting at the Elephant and Castle Theatre are somewhat extensive. The alterations are eleven in number, amounting in a large degree to the reconstruction of the theatre. They include the construction of a new floor of fire-resisting materials in the box saloon; the erection of a brick wall, 14 in. thick, to separate the arches of the London, Chatham, and Dover Railway from the theatre premises; the construction of fire-resisting roofs over the pit saloon, and so much of the theatre premises as extend under the platform of the Elephant and Castle Station of the railway company; the stage entrance and the passage-way leading to it to be made 4 ft. 6 in. wide; and a staircase of teak, 3 ft. 6 in. wide, to be provided at the south-west angle of the stage, in lieu of the present stairs; the staircases to the upper part of the gallery at the north-east and north-west angles to be removed, and new staircases, 4 ft. 6 in. wide, consisting of fire-resisting materials, to be substituted; brick parapet walls to be built to the external walls of the theatre, carried up 3 ft. above the eaves; strong handrails to be fixed to both sides of all staircases, landings, and flights of steps, where not provided; a gangway, 3 ft. wide, to be formed down the centre of the pit; three gangways, each not less than 3 ft. wide, and having easy steps, to be formed in the gallery, one at each side, and one in the centre; also that the concrete steps of the gallery staircase, and the concrete flooring, be reinstated; and that all doors be made to open outwards.

REBUILDING OF GATTI'S MUSIC-HALL, WESTMINSTER BRIDGE-ROAD.

DURING the last few months Gatti's Music-hall, or Theatre of Varieties, as it is now called, has been in course of reconstruction, and, having just been completed, is now open. In order to meet the requirements of the Metropolitan Board of Works under the powers which the Board now possess as to the construction of public places of entertainment, Messrs. Gatti had to purchase the premises adjoining their establishment. These they acquired at a cost of more than 3,000*l.*, by which they have been enabled to erect a greatly enlarged building with considerably extended facilities for ingress and egress. The new building forms a prominent feature in Westminster Bridge-road, to which it has a frontage of 45 ft. in length, and is upwards of 50 ft. high. The lower or ground portion of the frontage is in red Shawk stone from the Newcastle quarries, and consists of the main central entrance to the body of the hall, and two entrances to the gallery, one at the east and the other at the west end of the frontage. This portion of the frontage is ornamented with Dalbeattie granite pilasters, having carved capitals. The main entrance is surmounted by a massive central arched pediment, above which is a niche in which an allegorical figure representative of Music is intended to be placed. The gallery entrances are likewise surmounted by pediments. The elevation of the three upper floors is in Portland cement, relieved and ornamented by pilasters with capitals, carried up to the top of the building. The structure is finally surmounted by a balustrade and a central block arch. As a further relief to the materials of the frontage panels in iron-work are carried across the frontage above the first floor, and similar panels in red terra-cotta above the second floors.

The vestibule, the walls and ceiling of which are richly decorated, leads into a spacious corridor, the full width of the building, the floor of which is laid in mosaics of varied patterns. The lower part of the walls of the corridor has a dado, composed of ornamental polished tiles, surmounted by a moulding in Rouge Royal marble. The floor of the promenade in the body of the hall, under the gallery, is also laid in mosaics. The auditorium has been entirely reconstructed and much enlarged. The front of the gallery is decorated in white and gold, numerous musical figures being introduced. The ceiling is in panels, formed of ribs springing from pilasters on the walls. The ceiling decorations are in varied colours on a buff ground. The stone staircases to the gallery are fireproof,

whilst the staircase walls are faced with Minton's glazed tiles. Within the building there are three hydrants in connexion with the main street water-service which can immediately be brought into use in case of fire. In addition to the two distinct and separate entrances to the gallery, there are likewise three entrances to the body of the hall.

Mr. Bolton, of Lincoln's Inn-fields, is the architect, and Mr. G. Gaisford is the general contractor. Messrs. Dike & Bruton, of Buckingham Palace-road (agents for the Shawk Stone Paving Company), have executed the stonework; and the tile work and mural decorations have been carried out by Mr. Diespecker, of Holborn-viaduct. The cost of the building, exclusive of the purchase of the premises already referred to, is upwards of 7,000*l.*

ARCHITECTURAL IMPROVEMENTS IN FORE STREET.

FORE-STREET, in the City, is at present a busy centre of activity in connexion with the building trade. Something like one-third of the south side of that thoroughfare is in course of construction. A few months ago a number of building sites in Fore-street, on what is known as the Blackden Estate, were let on building leases, for terms of eighty years, one of the conditions of the letting being that the lessee of each lot was to expend a certain amount named in new buildings on the site leased. The total amount of ground-rents realised for the property was about 3,400*l.* per annum, and the conditions stipulated that a sum of not less than about 40,000*l.* was to be expended in new buildings, and it is on these several sites that the buildings in progress are to a large extent being erected. At the west end of the street, immediately adjoining the block called Cripplegate-buildings, recently erected, two extensive blocks of new warehouse premises are in course of erection, having a frontage of 140 ft. in length, with a fine architectural elevation, the materials of the frontage being pressed red brick and Dumfries stone. Messrs. Curtis & Son, of Blomfield-street, are the architects, and Mr. Brass, of Old-street, and Mr. Morter, of Stratford, are the contractors. At the corner of New Basinghall-street another new block, in Portland stone, and four stories in height, has just been completed, and immediately adjoining them eastward, a similar block is now in progress. A short distance still further eastward, another new building is fast advancing towards completion. The ground-floor portion of this structure is in Mansfield stone, the first and second floors being carried up with continuous four-light bay windows, ornamented with Mansfield stone shafts and piers. Above a cornice, also in stone, there is a third floor faced with red brick, and elaborately carved and fluted stone work. Mr. G. A. Dannage and Messrs. Harvey & Protheroe are joint architects of this building. Continuing eastward another block of about 40 ft. in length, and 60 ft. in height, is nearly completed. The ground and first floors are in Portland stone, with massive piers. The second and third floors are in white Suffolk brick, with Portland stone dressings. Each floor has spacious three-light windows of 10 ft. in width. The elevation is surmounted by three arched domes. Mr. Lawrence, of Wharf-road, City-road, is the contractor. A few yards west of Moorgate-street preparations are being made for the erection of a block of shops and offices, the building extending in depth to London-wall, the ground-floor portion of which is to consist of warehouses, and the upper stories of offices. Messrs. Curtis & Sons are the architects, and Mr. Morter, of Stratford, the contractor.

GOTHIC ARCHITECTURE IN ITALY.

THE Royal Academy of Arts at Naples has offered a prize of 500 lire for the best essay on the origin, development, and suitability of Gothic architecture in Italy, and the different forms it has assumed in different provinces of that kingdom. The last day for the receipt of the essays will be March 30th, 1884. The competition is without restriction as to the nationality of competitors, but the essays must be either in the Italian, French, or Latin language. Treatises already published on the subject are not admissible. The competitors must enclose their names in a sealed envelope, distinguished by a motto, which is to be also prefixed to the essay.

ROPE TRACTION ON TRAMWAYS.

LIVERPOOL ENGINEERING SOCIETY.

THE fifth meeting of the Session was held on Wednesday, the 14th of March, at the Royal Institution, Colquitt-street,—Mr. H. Bramall in the chair,—when a paper entitled "Wire-Rope Traction on Tramways as practised in American Cities" was read by Mr. C. F. Findlay, M.A. The author pointed out the reasons why stationary engine systems had universally been disregarded for general railway purposes in favour of locomotives, and described the conditions under which alone the stationary system could successfully compete, the advantage in economy which resulted when the stationary system could be adopted, the difficulties in the way of its adoption, and how these difficulties had been met,—first in San Francisco, and then in Chicago and other cities. The grip used on the Clay-street Hill-road, the first of the kind constructed (in 1873) was described, and a model of it exhibited. The author then went on to give a detailed account of the latest and more extensive application of the system to the tramway lines of the Chicago City Roads Company, which, when the whole system is complete, will embrace nearly fifty miles of tramway all actuated from one engine-house by ten long endless cables. Various plans of the works were shown, and the result of the experience of the system so far,—twenty miles of cable being now at work,—were described as being entirely satisfactory, and surpassing the expectations of its promoters. Burning 630 lb. of coal per hour, they were doing work which would require 600 horses to be kept. The engine indicated 115-h.p. when moving the cables of one street, four miles and a half in length, at the busiest part of the day,—there being forty-three trains of two cars each on the cables, and 1,900 passengers (estimated) on board. The line constructed by the Union Passenger Road Company in Philadelphia was described, and also the grip used on the rope tramway or railway over the East River Bridge from New York to Brooklyn. Plans were also shown of the Highgate-hill tramway, now being formed in London from the designs of Mr. Jas. Cleminson, M. Inst. C.E.

THE ELECTRIC LIGHT ENGINE-HOUSE ON THE THAMES EMBANKMENT.

THE agitation which has been caused by the ventilators which the Metropolitan District Railway Company are at present erecting on the Thames Embankment imparts some interest to the engine-house, which the Jablochkoff Electric Light Company have just erected in the Embankment Gardens, near the Charing-cross Station of the District Company. The building is understood to have been erected by permission of the Metropolitan Board of Works, for the use of the Jablochkoff Company, who have for some time past supplied the electric light on the Embankment. The structure itself has now been covered in and externally completed for some weeks past, but those persons passing along the Embankment will have noticed that the works are now suspended, and there appears no present intention of getting in the necessary machinery, and completing the structure for its intended purpose. The stoppage of the works is said to be owing to an objection which has been taken to such a building ever having been allowed to be erected within the Embankment Gardens, and that with the emission of smoke and steam from the engine-house chimney it would be almost as great a nuisance as the ventilators, and equally injurious to the plants and flowers in the gardens. It is said to be not unlikely that the building may never become an engine-house at all, but that, on the other hand, it will ultimately be removed. It is urged that the Jablochkoff Company might easily find a site for their motive power without turning the Embankment Gardens into a machine-shop.

AN IRON THEATRE.

ACCORDING to the *National Zeitung* of Berlin, a local theatrical manager, who is obliged to leave his own theatre next autumn to make room for a new tenant, proposes, in order to prevent any possible interference from official inspectors, to construct a theatre entirely of iron.* A circus proprietor is said to have come to a similar determination.

* Much would still depend on the planning.

VISIT OF ENGINEERING STUDENTS OF KING'S COLLEGE, LONDON, TO THE WEST HAM SEWAGE WORKS.

PROFESSOR ROBINSON, M.Inst.C.E., and several senior engineering students, paid a visit, by the courtesy of the West Ham Local Board, to the sewage works and pumping-station of the West Ham district at Bow Creek on Saturday last. They were met by Mr. Lewis Angell, M.Inst.C.E. (Associate and Hon. Fellow of the College), and engineer of the West Ham district. Mr. Angell explained the works, which were originally designed in 1857 by Mr. Rawlinson, now the chief engineering inspector of the Local Government Board, at a cost of about 90,000*l.*, when the population was about 30,000, since which time more than 100,000 had been added to the population (now about 140,000). Since Mr. Rawlinson's time the drainage system has been more than doubled, and the necessity for sewage purification imposed. The party were conducted round the works and the system of pumps, tanks, and purification explained, after which Mr. Bowes Scott, in the absence of Major-General Scott, C.B., explained his system of sludge treatment then in progress by the addition of superphosphate of lime, and Mr. Hutchinson, of the firm of S. H. Johnson & Co., Stratford, explained the action of a new filter-press for solidifying the sewage sludge. Major Flower, the sanitary engineer of the Lea Conservancy, and Mr. Bryan, Engineer of the East London Waterworks, were also present.

BERLIN HYGIENIC EXHIBITION.

ACCORDING to details recently published in the German newspapers, the applications for space at the above exhibition would seem to have exceeded the room at the disposal of its promoters, so that a selection has had in some instances to be made of the most interesting objects proposed to be sent in. In some cases the programme, as drawn up for last year, has been extended in its scope, the new features including the laboratory of the Imperial Sanitary Administration, several mining exhibits, and finally a complete dwelling-house, with all needful domestic and furnishing appliances. Several bakehouses will also be shown in operation.

The large pictorial *tableaux* of Professor Preller will form suitable adjuncts to the display. They represent the charitable deeds of St. Elizabeth, and the thanksgiving of a family restored to health, the members of which are kneeling before the altar of Æsculapius. The surroundings of these main objects are said to be appropriate and effective.

Amongst the events which will be associated with the progress of the exhibition will be course of popular scientific lectures to be delivered in a special building, by leading German authorities, on the respective subjects to be treated. A competition is to take place of plans for the erection of a fireproof theatre. These have to be sent in by the 30th of June, and will be on view after that date at the exhibition.

THE MARBLE OF ATTICA.

THE German Academy of Sciences has sent to Greece the two eminent geologists, Professor Lepsius, of Darmstadt, and Professor Bücking, of Kiel, to make a thorough investigation of the geology and petrography of Attica. The principal object of the expedition is to throw light on the marble strata of that portion of Greece. The learned gentlemen have already arrived in Athens, and are commencing their labours.

Leeds.—Three north-aisle windows of the Church of St. Bartholomew, Armley, have just been filled with painted glass, at the cost of Mrs. Ellis, of Armley, by way of family memorials. The aisle windows of the church have been devoted to the illustration of Scriptural antetypes. The selected subjects in the present case are Moses lifting up the Brazen Serpent in the Wilderness; David decapitating Goliath with the fallen giant's own sword; and Elijah carried up to Heaven by fiery horses in the chariot of fire. Messrs. Powell Bros., of Leeds, are the artists. The style of treatment is Early English, in accordance with the church architecture.

COMPETITIONS.

Gosport Town-hall and Parochial Offices.—A competition among architects has recently taken place for a memorial hall and offices for Local Board, Guardians, and Overseers for the parish of Alverstoke. The professional referee employed was Mr. Benjamin Tabberer, F.R.I.B.A., of 10, Coleman-street, London. The number of competitors was limited to seven, and the designs they sent in were placed in the following order of merit, awards being made to the first four successful competitors, viz.:—1st premium: The commission to supervise the erection of the buildings at a remuneration of 5 per cent. upon the money expended,—Messrs. Davis & Emanuel, London; 2nd: 50*l.*,—Mr. W. Yeardye, Gosport; 3rd: 30*l.*,—Mr. A. H. Ford, Portsmouth; 4th: 20*l.*,—Mr. A. Hudson, Portsmouth. The other competitors were Mr. Sulman, London, Mr. A. H. Bone, Portsmouth, and Messrs. Rake & King, of Portsmouth and Gosport respectively. Under conditions of competition (which were drawn by Mr. Tabberer, after consultation with the committee), the building is to consist of three blocks. The total cost is not to exceed the sum of 8,800*l.* The selected design, which is Flemish in character, is proposed to be built in red brick with stone dressings.

All Saints' Church, Ipswich.—The exhibition of plans sent in in this competition (referred to in the *Builder* a fortnight ago) has now closed. The *Ipswich Journal* says that large numbers of people have inspected the numerous designs with much evident pleasure. The public will have to wait a short time before they are made acquainted with the name of the gentleman who may secure the 50*l.* premium offered by the building committee. It was originally anticipated that the referee, Mr. Ewan Christian, would have visited the exhibition and made his recommendation to the committee, but the number of separate designs,—between eighty and ninety,—rendered this next to an impossibility to a gentleman whose time is valuable, so the plans are to be sent to him.

The Science Museum in Dublin.—Last week, in the House of Commons, Mr. Courtney, in reply to a question by Mr. Coope as to the Dublin Science and Art Museum, stated that it was the fact that five designs for carrying out the original scheme were selected, but no guarantee was given that one of them would, in any case be carried out. In deference to local opinion, the former scheme was abandoned, and quite a different one substituted for it; and it was for this that a new competition was about to be instituted. The position of the architects formerly selected would not be forgotten, and he had now before him papers on the question.

Fordingbridge.—At a meeting of the Guardians of Fordingbridge Union, held on Friday, the 9th inst., the plans for the new workhouse, prepared by Mr. Fred Bath, architect, of Crown-chambers, Salisbury, and 342, Strand, London, were approved.

BANKS.

THE North-Eastern Banking Company, in order to meet their rapidly-increased business, have lately built and opened new banking premises at Jarrow and Loftus-in-Cleveland. The building at Jarrow is situated at the corner of Ellisin-street and Grange-road. On the ground-floor is a large telling-room, manager's office, strong room, and all requisite adjuncts. The upper floors are conveniently arranged as a residence for the local manager; the exterior is of Renaissance design, with a quiet and dignified effect, and executed in polished stone ashlar and dressings. The work was carried out by Messrs. Storar & Murray, contractors. The buildings at Loftus are situated in the main street, and form a prominent feature; the accommodation is the same as at Jarrow. The design is also of Renaissance character, in polished stone from the Zetland quarries. The contractor who executed the work is Mr. Thos. Dickinson, of Saltburn-by-the-Sea. Both buildings have been erected from the designs of Mr. W. Lister Newcombe, F.R.I.B.A., of Newcastle-upon-Tyne.

Addington Church.—A window in memory of the late Archbishop of Canterbury is in course of execution for Addington Church, by Messrs. Clayton & Bell, of Regent-street.

DANGEROUS CONDITION OF HOUSES IN CANNON-STREET.

THE RAILWAY WORKS.

THE construction of the Inner Circle Completion Railway, which is now in progress, is attended with some considerable danger to houses in the locality of Cannon-street. Tunnelling under this thoroughfare is now going forward from one end of the street to the other, the neighbourhood of Abchurch-lane being a central point of the operations. Within the last few days several houses in the street have shown symptoms of being affected by the Company's works. Amongst these are the premises of Mr. W. Christie, watchmaker, which have just given evidence of subsidence, and although the premises were at once shored up on the subsidence showing itself, the walls have since given way, and are now out of perpendicular. Following upon the above-named premises being injured, the two adjoining houses have since become singularly affected, shoring-up being necessary in order to prevent their further giving way. An opinion prevails that there is a probability of the houses in question having been built on faulty foundations, and that now the railway company's tunnelling operations have disturbed the structures at their base, and caused the displacement of the walls.

THE DECORATION OF THE HOUSE OF THE SOUL AND OF ITS OUTER MANSION.

SIR,—The close analogy subsisting between the human body, regarded as the house of the soul, and its outer mansion of builded material in which we dwell, was very anciently recognised. In the first book of Corinthians the body is regarded as "the temple of the Holy Spirit." In the Scriptures the temple and the house are interchangable terms, and the human body, house, or temple is in several passages alluded to as the edifice which is gradually to be built up to perfection. The soul's house, therefore, to be a fit and proper house must be possessed by the Holy Spirit of moderation or temperance. The great poet Spenser did not fail to perceive that this was a necessary condition,—a condition essential to its true proportionment and decoration. And in the Faërie Queene, in the legend of Sir Guyon or Temperance, he describes the house of temperance so deftly that the novice never suspects whilst reading that Spenser, under the titles of their architectural analogues, is describing the different features of the rightly-ordered human body, of the house of the soul. The opening stanza commences thus:—

> "The frame thereof seem'd partly circulare,
> And part triangulare: O worke divine!
> Those two the first and last proportions are;
> The one imperfect, mortal, fœminine;
> Th' other immortall, perfect, masculine;
> And 'twixt them both a quadrate was the base,
> Proportion'd equally by seven and nine;
> Nine was the circle sett in heaven's place;
> All which compacted, made a goodly diapase."

This analogy may be pushed to the uttermost, and the principles of decorating or of dressing the house of the soul may be instructively transferred to the decoration of its outer mansion or home of bricks and mortar. It may possibly be said that this mode of teaching the proper decoration of the home is exceedingly roundabout, and that those who happen to be destitute of taste, and who, therefore, neither dress well nor decorate their mansions artistically, will not be improved by the method. Those who may entertain this opinion will nevertheless, I believe, on maturer consideration change it, for they will come to perceive that every one is more sensitive and teachable as regards taste in personal adornment, in regard to the decoration of the soul's house, than in taste with respect to other matters. The fair sex are more especially teachable in this direction. It must have come within most persons' experience that women have an intuitive perception of the right means of mitigating any peculiarity either of body, feature, or complexion, and the means taken, if rightly studied, would furnish useful hints for mitigating analogous peculiarities in the aspects of the dwelling, to guide us in the tasteful decoration of our homes. This spirit of mitigation or of compromise is imperatively demanded in tasteful decoration, for we have to take our dwelling-house and our soul's house pretty much as we find them. We may sometimes, indeed, have the power of altering the former to our will, but never to any considerable extent the latter. We have, therefore, in the majority of cases to make the best of both our possessions. And the mode of making the best of our personal appearance may always be made to suggest analogous means for making the best of some peculiarity of construction, or some other inevitable condition of the house we live in. If these views be just, they suggest the possibility of an essay upon "Art in the House," founded upon the principles of taste in dress, for dress is the decoration of the soul's house. It is a project which some artist who may have deeply studied his profession may think it worth his while to take up and carry out. We have, however, even in this brief discourse, already come to perceive that in dress and in decoration, as in conduct, moderation or temperance is the great principle of rectitude. This one conclusion may be fruitful in results with respect to the topics I have touched.

W. CAVE THOMAS.

THE BRAIN TAX.

UNDER this title one of your correspondents, in your issue of the 31st of May, 1879, proposed to "fight" the Patent Laws. There has not been much fighting since that date, although the question has occasionally come to the front, by way of general murmur from some son of Albion who has had an idea *strike* him, but who has not been able to *strike* the idea for want of funds, or rather, for want of a cheap Patent Law.

Out of the two Bills * now before the House, and which have just been read a second time, we may look forward to some good and cheap legislation upon this matter. A cheap Patent Law will no doubt have a good stimulating effect upon the general trade of the country, while the new Bankruptcy Bill, also before the House, should prevent too much risky goaheadativeness, and keep trade upon a healthy footing.

I do not think it desirable to have the Patent Laws too cheap, or we should soon have a mushroom growth of *English novelty* shops, similar to those selling Yankee notions, which have lately sprung up amongst us.

Below is a tabulated scale of fees from the two Bills now before the House; and, in juxtaposition, I have placed the rates now payable under the Act of 1852.

Comment upon the great difference in fees between the old Act and the new Bills is unnecessary. It will be apparent to your readers at a glance:—

—	Under Act of 1852.	New Bill No. 2.	New Bill No. 3.
	£. s. d.	£. s. d.	£. s. d.
On Petition for grant of Letters Patent	5 0 0	2 10 0	1 10 0
On giving notice to proceed	5 0 0	—	1 0 0
On warrant and sealing of Letters Patents.....	10 0 0	5 0 0	1 0 0
On final specification.....	5 0 0	—	1 0 0
Total cost for three years, Act of 1852	25 0 0		
Total cost for four years, No. 2 Bill.....		7 10 0	
Total cost for seven years, No. 3 Bill.....			4 10 0
Stamp duty at end of third year.....	50 0 0	—	—
Stamp duty at end of fourth year	—	20 0 0	—
Stamp duty at end of seventh year.....	100 0 0	—	20 0 0
Stamp duty at end of eighth year		50 0 0 and 10*l.* per annum after up to seventeen years, viz.:— 90 0 0	—
Stamp duty at end of twelfth year.....			20 0 0
Stamp duty at end of seventeenth year			20 0 0
Total cost for fourteen years, Act of 1852	175 0 0		
Total cost for seventeen years, No. 2 Bill.....	—	167 10 0	
Total cost for twenty-one years, No. 3 Bill.....	—	—	64 10 0

There are several other minor fees for notice of objection, disclaimer, assignment, &c. The new Bills propose twelve months as the term of provisional specification from the date of the petition, instead of six months. No. 2 Bill also provides for alteration to specification for additional fees.

INVENTOR.

* One (No. 2) introduced by Sir John Lubbock, Mr. W. H. Smith, and Mr. J. C. Lawrance, and the other (No. 3) by Mr. Anderson, Mr. Broadhurst, and others.

FROM IRELAND.

Monaghan Cathedral.—The Rev. Dr. Donnelly, R.C. Bishop of Clogher, having decided to complete his cathedral, has made a contract with Messrs. M'Elhatten Brothers, of Belfast and Cookstown, for the erection of the spire, which (according to the *Freeman's Journal*) is to attain an altitude of about 240 ft. above the level of the ground, and will be surmounted by a foliated cross, wrought in brass, and set with crystals. The bishop has also undertaken to finish the flooring, plastering, seating, and stalls of the cathedral, as well as the boundary walls, so as to have everything complete on the day of dedication. The architect engaged by the bishop for these works is Mr. W. Hague, No. 62, Dawson-street, Dublin, under whose superintendence, with the assistance of Mr. Dooly, clerk of works, the various items are now in active progress.

Knock.—The preliminary portion of the buildings of the Convent Schools and Industrial Training-house at Knock has been contracted for. It comprises the usual arrangements of conventual establishments, with large airy cells, and is provided with every modern sanitary requirement. The exterior of the building is simple in style. The most rigid economy consistent with strength and durability has been exercised, in accordance with the special instructions of the Mother Superior. Designs have been furnished for the entire buildings by Mr. William Hague, of Dawson-street, Dublin. The first contract has been confided to Mr. Joseph Clarence, of Ballisodare, county Sligo.

THE QUEEN'S SCHOOL, CHESTER.

THIS school was opened on the 10th inst. by the Duke of Westminster, who laid the foundation-stone of the building on the 6th of March, 1882. To Dean Howson is due the credit of having taken the initial step towards the execution of the project. The advantage conferred by the King's School coming home forcibly to the Dean's mind, he conceived the idea of establishing a school for girls on similar lines. He soon set practically to work with the view of carrying out his scheme. He rallied around him a number of willing auxiliaries, subscriptions came to hand, a guarantee fund was established, premises were secured, school furniture was purchased, and, in a very short time, the work of education was in full swing. The council under whose management the school was constituted showed a vigilance and industry which commanded success. Before long it became apparent to the Dean and all who were interested in the school that if, as an educational institution, it was to fill the important position to which from its constant progress it seemed destined it should be more suitably housed. The question of providing better and enlarged accommodation was anxiously taken into consideration by the council. The Duke of Westminster, who had learned the nature of the work which the school was accomplishing, offered, as a site for a new building, the ground on which the old city gaol once stood, and, as a further encouragement to the council, he added a donation of 500*l*. Other ladies and gentlemen who took an interest in the undertaking were not slow in contributing, and it was resolved to commence building operations at once. Accordingly Mr. E. A. Ould, of 24, Newgate-street, Chester, was employed as architect, and Mr. William Andrews as builder, and the foundation-stone having been laid, the process of erection was carried out so quickly and effectively that in twelve months the building has been completed and occupied. It is in the Tudor Gothic style, and accommodation is provided for 180 pupils and a resident headmistress and five assistants. On the ground-floor is a schoolroom 55 ft. by 33 ft., within which the girls can assemble for prayer or collective tuition, and also for prize distributions and concerts. There are likewise on the ground-floor four class-rooms and a dining-room, in which forty day boarders can be accommodated. To the rear of the north block are kitchen and store-rooms and kitchen offices, and likewise a covered cloister which enables the pupils to reach the various parts of the building under cover, without passing through the school-rooms. On the first floor in the south wing is a fifth class-room and a music-room, altogether apart from the rest of the house. The north wing contains sitting-room and bedroom accommodation for the mistress and her assistants, whilst in the attics are servants' and spare rooms. Under the south class-room is a cell, from which the entire premises and passages are heated, by means of Messrs. Gibbs's heating apparatus. Fresh air is introduced by Tobin's ventilators, and the vitiated air will be carried off by shafts from the ceilings to the *flêche* on the roof. The material of the building is red brick. The windows, doors, and ornaments are in terra-cotta, from the works of Mr. H. R. Bowers, at Ruabon. To the rear of the building there is a large asphalted space, on which the pupils can play tennis. The total cost of the building has been 3,800*l*.

JESMOND WESLEYAN CHURCH.

THE opening services of the new Wesleyan church at Jesmond took place on Wednesday, the 7th inst. The building comprises a church, with vestries, class-rooms, and a lecture-hall, all upon one floor, and with perfect communication with each other. In the church there are 830 sittings, and the total cost will be about 10,500*l*. The interior of the church is planned with nave, aisles, and transepts, the nave being divided from the aisles by a series of columns and arches, which carry a clearstory wall. Galleries run along either side and the north end of the church. The pulpit-rostrum is of pitch-pine and American walnut, and can be used, not only as a pulpit, but as a platform, in case of public meetings being held, will be exceptionally low. The organ and choir are placed in an apsidal end, semi-octagonal, and forming the southern termination of the nave, from which it is divided by a bold, deeply-recessed arch, rising from clustered marble shafts. The angles of the apse are occupied by ornamental marble columns, carrying moulded ribs, springing from decorated capitals. The seats are constructed of pitch-pine, and are exceptionally wide and comfortable. They will accommodate 837 persons. The subjects of ventilation, light, and heating have received the closest attention. The church will be warmed throughout by hot water, and the pipes will extend into the lecture-hall. The lobbies and approaches are also heated by masses of hot-water pipes to the same temperature as the inner portions of the building. Most complete and elaborate arrangements have been made to secure good ventilation. Fresh warm air, which can be regulated according to the condition of the temperature, is admitted into the chapel and lecture-hall, while the arrangement at the roof is such as to form an outlet for the vitiated air, and at the same time prevent the possibility of down draughts.

The contractors for the mason's and joiner's work of the building were Messrs. Lishman & Salter, Ryton; Messrs. Beck & Co., slating; Messrs. Copland & Rollo, painting; Messrs. Thompson Bros., Leeds, leaded glass work and stained glazing; Mr. Atkinson, Newcastle, entrance-screens; Mr. T. R. Spence, Newcastle, stained glass for the vestries and lecture-hall; Messrs. Walker & Emley, Newcastle, heating apparatus; Mr. Snook, Newcastle, pulpit; Messrs. Sherrat & Ovens, Preston, stone-carving; Mr. Abercromby, Newcastle, wood-carving; Messrs. Beaty Bros., Carlisle, red freestone for banding the building. Mr. Allen has acted as clerk of the works, and Mr. J. J. Lish, Newcastle, is the architect.

LINCRUSTA-WALTON.

MESSRS. FREDERICK WALTON & CO. (Limited), the manufacturers of this invaluable decorative material for wall and ceiling coverings, dados, door panels, &c., have now on view, at their stand in the south nave of the Crystal Palace, a number of specimens illustrating the varied applications of the material. In addition to the artistic effects which Lincrusta-Walton is capable of producing, it merits attention on sanitary grounds, for it is readily washable without injury; while it is practically incapable of being damaged by the contact of furniture with its surface, so that walls, passages, and staircases once covered with it seem likely to last as long as the house of which they may form part. It is made in certain ground or body colours, variation of surface being obtained where required by patterns stamped in relief, these patterns being picked out in various colours according to taste. Many of the designs contained in the new pattern book issued by the Company are of very great merit. One of the newest applications of the material is as a lining for railway-carriage divisions and ceilings, and a section of a railway-carriage so treated is shown in the rear of the stand in the Crystal Palace. The material is also largely used now for the decorations of the saloons of the large passenger steamers running between this country and India, America, and other parts of the world. For folding and other screens intended to be painted upon, and for decorative panels, the material is prepared with a slightly granulated surface.

SMOKE ABATEMENT COMMITTEE'S EXPERIMENTS.

SIR,—To prevent misapprehension arising from Mr. F. Edwards's letter published in your issue of the 3rd inst., it may be well to state that Mr. Edwards's description of the chimneys is incorrect. There is no brickwork at all in their construction. Larger grates than his were tested under corresponding conditions, and the committee's report shows in what respects they proved superior to his. It may further be observed that Mr. Edwards's grate professes to be a "slow combustion" one, and, therefore, the small size of the chimney would, on his own showing, be in his favour as compared with some other competitors.

With regard to Mr. Edwards's statement that Captain Douglas Galton and Dr. Siemens have "disclaimed responsibility" for the testing, the fact is, Captain Galton said, in reply to Mr. Edwards's inquiry, that he was laid up during the testings, and, therefore, could not give him any information about them. The secretary of Dr. Siemens replies to inquiry that he knows of no communication whatever having passed with Mr. Edwards. All the information Mr. Edwards can require is to be found in the report of the testing engineer, Mr. D. K. Clark.

WM. R. E. COLES, Hon. Sec.

"AN ARCHITECT ON LAWYERS."

SIR,—As a lawyer (although a retired one) I naturally read the letter headed "An Architect on Lawyers" in yours of the 10th inst., p. 311. Had I been "a fledgling" I might have entered in my notebook as valuable and technical information in case I had to draw up a building agreement that "a brick is an incombustible material," and "fire-brick, a lining for chimneys." My "fledgling" building contract, therefore, would probably contain a clause that "all furnaces be lined with brick and mortar," "all chimneys (of the dwelling-house) to be lined with fire-brick." Would Mr. Kerr call the builder who carried out these instructions "a commendable person, a trump, a jolly good fellow," and so on, as long as fancy might hold out?

The "fledgling" who would not admit Mr. Kerr's incontestable proposition "without evidence" was, I think, simply "reserving his forensic rights" (whatever that may mean), and probably thought it would be "more convenient for his purpose" to elicit Mr. Kerr's grounds for supposing brick to be an incombustible (that is, that it cannot be burned, decomposed, or consumed by fire), and to ask Mr. Kerr whether bricks made about London did not contain a considerable proportion of coal ash, upon cross-examination.

I have consulted books of reference without discovering the *habitat* of the wood-brick tree, upon which, I suppose, grow the blocks used for wood paving; and I cannot find any mention of air-bricks being used for ballooning purposes. I even looked in my "Dictionary of Phrase and Fable": they were not described even there.

Perhaps Mr. Kerr can explain what he means by the term, "a false issue,"—perhaps he means a false fact,—because "issue" is a very technical word: it means the point in dispute as ascertained by the pleadings, and as the pleadings are founded upon the statement of the parties, it is they, not the arbitrator, who are to blame if a case be decided upon "a false issue," and that whether he be a lawyer or an architectural expert.

I do not think that the architectural and building world are likely to "increase facilities for the settlement of disputes" by bad judgments, certainly not by "the worst judgment of an architectural referee." I have often been asked not to insert an arbitration clause on the

ground that it was cheaper and more expeditious to go to law than to arbitration.

I do not think that Mr. Kerr's story about the lock of a "ledged" door "ledges" his case. Punctuation is not used by lawyers,—a judge once said that it would be unfair that a man's title to an estate should "hang on a comma." I think the mistake was one that even an architect might possibly have passed over, and even an architect might, if unaided, be unequal to price a carpenter's bill; but an arbitrator is not called upon and need not be competent to price bills or to fix a fair price. He is to decide between the price asked and the price offered, and this he does upon evidence. He, therefore, requires to be trained in sifting and weighing the value of the evidence before him, and for this purpose it seems immaterial whether the price in dispute be of a door or of a lock. If, however, builders' disputes especially lie between the two extremes, and both parties admit that fact, then arbitrating would be, indeed, cheap and expeditious. However, I forgive Mr. Kerr for his bad appreciation of us in consideration of his introducing wood-brick trees and air-brick balloons to public notice.

ONLY A LAWYER.

A DOCTOR'S HOUSE, BEDFORD PARK.

SIR,—I cannot understand how an architect, — as your correspondent, "Architectus," appears to be,—could have fallen into such a misunderstanding, and it is a pity he should commit himself to unjust remarks without the slightest foundation. No one supposes for a moment that I or Dr. Hogg lay claim to having "designed" the principles of the system upon which this house is ventilated; whether the principles were first laid down by Drs. Drysdale and Hayward, or were used by Messrs. Price, Lee, & Co., or by some one before them, I do not know, but the only source of information I had were those parts of Messrs. Drysdale & Hayward's book dealing with the practical application of these principles.

I certainly designed Dr. Hogg's house and adapted these said principles to it, and moreover, for anything I know to the contrary, most of the practical details of the system are original. As I never heard before either the names of Messrs. Price, Lee, & Co., or of anything they had done, it was hardly possible for me to "inform the members of the society" at the Architectural Association visit that the design of this house "belongs to Messrs. Price, Lee, & Co."

I ask "Architectus" to say what building he refers to in which "the principles and the whole arrangement" have been carried out, so that I may go and see it. E. J. MAY.

P.S.—Dr. Drysdale, of Liverpool, has just written to me, and he says "I have never heard of Messrs. Price & Lee, nor was I aware that our plan had ever been proposed or carried out before when I built my house in 1881. I hardly think their plan can be the same, although, perhaps, it may resemble ours in some points, but unless it contains the foul-air chamber it would not be complete nor work practically." E. J. M.

VARIORUM.

AMONG Messrs. Longman & Co.'s Text Books of Science comes a new edition of "Metals: their Properties and Treatment," by Chas. Loudon Bloxam. It has been partially re-written and augmented by Mr. Alfred K. Huntingdon (of King's College, London). It includes numerous useful illustrations, and the information is conveyed in a very clear manner. ——We have this month received a more than usually bulky packet from Messrs. Cassell, Petter, Galpin, & Co., containing "Picturesque America," Part 24, to be completed in forty-eight parts, uniform with their publication of "Picturesque Europe" (an excellent book it will be when finished,—good paper, style, well printed, and with effective woodcuts, of which there are many in each number, as also a steel engraving of wild and picturesque scenery); "Our Homes, and How to Make them Healthy," Part 12 (which answers well to the title); "The Practical Dictionary of Mechanics," Part 75; "Gleanings from Popular Authors, Grave and Gay," illustrated, Part 18; "The Family Magazine," Part 100, illustrated; "Arabian Nights," Part 7, to be completed in sixteen parts, profusely illustrated; Part 1 of the "History of the German-Franco War" (new edition, fully illustrated); Part 1 of "The Library of English Literature," illustrated, to be completed in forty-eight parts; "Popular Educator" (new and revised edition), Part 28; "Illustrated Universal History," Part 18, illustrated; *Little Folks*, Part 99 (a periodical that ought to be in every house where there is a rising and increasing family, and it would be the means of giving children many hours of employment, accompanied with pleasure); and the *Quiver*, an Illustrated Magazine for Sunday and General Reading, Part 209. We may say, as we have said before, that the whole of the above are exceedingly well got up, and cheap (6d. and 7d. a part, with the exception of "Picturesque Europe"). The illustrations surpass those of many periodicals of more than double the price.——Part 374 of the *Leisure Hour* (56, Paternoster-row, London, and 164, Piccadilly) gives amongst other illustrations a fac-simile of an engraving published in 1803,—the time of the threatened invasion of England by Napoleon,—from a collection in the Bibliothèque Nationale, Paris, wherein numerous balloons and kites are seen crossing the Channel carrying various freights, and the sea well covered with ships of each country, and also a temporary tunnel, supported with wooden uprights and struts, wherein the various arms of the French are seen marching to England. It would be curious to know how long ago the execution of such a tunnel was first contemplated.——The *Girl's Own Paper*, Part 38, and the *Boy's Own Paper*, Part 49, each published at the *Leisure Hour* Office, include much reading of a very miscellaneous but appropriate character, and are fully illustrated. ——The Religious Tract Society (56, Paternoster-row and 164, Piccadilly) issues this month Part 32 of "Friendly Greetings: Readings for the People"; also Part 347 of "The Sunday at Home," which contains an elevation and a view of the cloisters of the Certosa at Pavia, in illustration of a paper by the Rev. E. Paxton Hood, headed "The King's Sceptre"; also No. 171 of "The Child's Companion," and No. 167 of "The Cottager and Artisan."—— "Shakspeare as an Angler" is the title of a little book by the Rev. N. H. Ellacombe, announced by Mr. Elliot Stock. It is an enlargement of some articles which appeared in the *Antiquary* in 1881, with additional notes.

Miscellanea.

Royal Scottish Society of Arts. — A meeting of this Association was held on the 12th inst. in their Hall, 117, George-street, Edinburgh, Professor Swan, president, in the chair. The first communication, which was made by Mr. Henry Adolphe Salvesen, engineer, Polmont, was concerning a new arrangement for preventing accidents arising from over-winding pit-cages, invented by Mr. Thomas Gillespie, underground manager for the Redding Colliery Company. By means of a working model Mr. Salvesen explained that the merit of the invention lay in a contrivance by which the rope became detached on the top of the cage coming in contact with the wheel, and by which the cage would remain suspended on two spring catches projecting from the guides. The arrangement being fixed to the cage and being a part of it, there would, it was pointed out, be no dangling of chains above the cage. The next paper, which dealt with electric valve-closing apparatus, invented by Mr. Tate, Bradford, was read by Mr. Robert Girdwood. The advantage of this invention was stated to lie in the possibility, by its means, of instantly stopping steam-engines. Mr. Girdwood also communicated a paper on "Davis & Company's Chimney Cowls and Ventilators." The peculiarity of these was stated to be that, instead of the smoke issuing from the cowl, the cowl drew the wind for some distance down the chimney in a pipe, turned at the lower end, and the wind, rising from the lower end of the pipe, forced its way up, carrying along with it the smoke, which would thus escape at the chimney-top.

New Parsonages.—The following is an extended list of new parsonages which it is intended to provide in connexion with the churches in the diocese of Manchester: — Bury, St. Peter's; Blackburn, St. Thomas's; Chorlton-upon-Medlock, St. Chrysostom's; Castleton, St. Martin's; Eccles, St. Andrew's; Greenheys, St. Clement's; Manchester, St. James the Less; and Ramsbottom, St. Andrew's.

A New Theatre for Edinburgh.—At a recent meeting of the Edinburgh Dean of Guild Court, the plans of a new theatre, proposed to be erected in Grindlay-street, were laid before the Court, and Mr. D. W. Paterson, S.S.C., on behalf of Messrs. J. B. Howard and F. W. Windham, the petitioners, moved that the Court grant authority for the erection of the building. In reply to the Court, Mr. Phipps, the architect, stated that there were to be iron railings on both sides of the staircases. The Court considered that the seats in the pit were too long, as they stretched from one side to the other, and it was suggested that there should be a passage down the centre. Mr. Phipps remarked that the highest authorities were now of opinion that there should be no break in the seats, and that the surrounding gangway or passage was sufficient. Where there was a centre gangway people blocked it up by standing, and it was difficult, if not impossible, to remove them in the event of a crowd. Ultimately the Court agreed to dispense with the centre passage, on the understanding that the passage surrounding the seats should be widened to 5 ft. Mr. Phipps agreed to give effect to a number of suggestions. In reply to the Dean of Guild, Mr. Phipps said, in regard to an iron curtain dividing the stage from the auditorium, that no special arrangement had been come to. It was a matter on which much difference of opinion prevailed all over Europe. Iron curtains that had already been put up in theatres were being taken down, because one had fallen down. Captain Shaw, the chief of the London Fire Brigade, disapproved of them altogether. He (Mr. Phipps) was now, however, considering with Mr. Wilkins, the Firemaster, whether to adopt a special curtain proposed by him. If they did not put up an iron curtain, they proposed to put up one made of asbestos cloth. The Court granted the warrant for the erection of the theatre.

A Builder's Will.—The will (dated Oct. 24, 1878), with a codical (dated June 20, 1881), of Mr. John Spicer, late of the Earl's-court Park Estate Office, South Kensington, builder, who died on Jan. 7 last, was proved on the 17th ult., by Mr. George John Spicer, one of the executors, the value of the personal estate amounting to upwards of 294,000*l*. The testator leaves to his wife, Mrs. Charlotte Spicer, 100*l*., and for life his residence with the furniture and effects, horse and brougham, and 600*l*. per annum; his executors are also to provide a coachman for her. To each of his three daughters, Fanny, Charlotte Emily, and Albina, 100*l*. per annum during the lifetime of their mother; to his son his jewels; and there are bequests to the widow and daughters of his late brother, and to an old servant. The residue of his property, real and personal, is to accumulate until the death of his wife, and is then to be held in trust for all his children in equal shares. The testator directs his funeral to be of the plainest and simplest kind, and a block of granite is to be placed over his grave, as he wishes to be buried as he has lived, in a plain and solid manner.

Work and Wages in the Engineering Trades.—The returns issued by the leading trades-union societies connected with the engineering branches of the industry show a general improvement in the state of employment. After the close of last year, there was a tendency to increase, although not to a large extent, in the number of out-of-work members, but during the past month there has been a decided decrease all round. In the Manchester and Salford district the Amalgamated Society of Engineers have now less than 2 per cent. of their members in receipt of out-of-work donation, and the returns received by the Steam Engine Makers' Society, which are the most satisfactory for some time past, show that throughout all their branches, numbering 4,000 members, there are not forty, or less than one per cent., of the members receiving out-of-work support, whilst the Boiler Makers' Society is practically paying no out-of-work donation. To a large extent the present good demand for labour is due to the great activity throughout the shipbuilding yards of the country, which is absorbing surplus labour from the engineering trades of the inland districts.—*Manchester Courier.*

Huddersfield Fine Art and Industrial Exhibition.—This exhibition promises to be a great success, and especially so in the machinery department. The applications for space have been so numerous and important that the committee have been compelled to provide more shed accommodation.

Proposed Sanitary Certificates for Brighton.—At the last meeting of the Brighton Town Council, the Works Committee presented a report from the town clerk (Mr. F. J. Tillstone) and the solicitor to the Corporation (Mr. A. F. Gell), to whom had been referred a suggestion made by Messrs. Jenner and Dell, that the Corporation should give an official certificate of the sanitary state of houses in the town, for the purpose of production to persons applying for a residence in Brighton. Both officers were of opinion that the Town Council had no authority to grant the certificates suggested. Mr. W. Sendall (chairman of the committee) regretted the inability of the Corporation to do as suggested, believing that, if the idea could be carried out, it would be for the benefit of the town. Something of the kind was very desirable. Alderman W. H. Hallett (ex-mayor) referred to an offer which was made some twelve months ago by a society of sanitary engineers to establish themselves in Brighton for the purpose of doing that which was suggested, and said the matter would, no doubt, come before the town again shortly. Alderman David Smith expressed a hope to see the society established in Brighton; but Mr. Botting regretted that the town authorities could not take upon themselves to give the certificates as suggested, as the certificate of a public officer would be of more weight than that given by a private society. Mr. Bostel entertained a similar opinion, and said the sanitary work of the Borough Surveyor's office ought to be separated from the other work of the department. Mr. Sendall said if the Council would only consider the matter, they would see how grave were the responsibilities which they would assume in undertaking to give certificates of the kind suggested. The drains of a house were the all-important things, and it must be borne in mind that they were all underground. To examine those thoroughly, in order to give a certificate, would be very expensive, and unless that were done, the certificate might be very delusive.

Fine Art in Whitchapel.—For the third year the Easter holidays will be turned to account in this crowded part of London by the holding of a fine-art loan exhibition in St. Jude's School, Commercial-street. The collection, filling four rooms of the school-house, contains many works which will be remembered by all frequenters of West-end exhibitions. There are pictures by Rossetti ("Head of Dante," "Fra Pace," "The Annunciation"), Walter Severn, John Linnell, Gustave Doré ("Midsummer Night's Dream"), Sir Frederick Leighton ("Romeo and Juliet"), Millais ("My First Sermon"), Watts ("Love and Death," "Poverty and Love," "The Four Horses of the Revelation," and portraits of Carlyle, Garibaldi, and Cardinal Manning), Sir E. Landseer, Holman Hunt ("Strayed Sheep" and "The Light of the World"), Calderon, H. T. Wells, Edwin Long, W. C. T. Dobson, Burgess, Orchardson, Armitage, Frith, Sir Noel Paton, B. W. Leader, Sydney Cooper, Briton Riviere, Brett, J. R. Herbert, Lawson, Baron Desanges, F. Goodall, Lee, Mrs. Allingham, Miss Clara Montalba, and many others. Explanatory notes and suggestive poetical quotations have been inserted in the catalogue to increase the interest of visitors in what is presented to them. In the absence through illness of the Earl of Dalhousie, the exhibition was opened by Mr. W. S. Caine, M.P.

Elevators.—By far the largest contract for elevators ever made was awarded by the Building Committee of the new Produce Exchange to Otis Brothers & Co., of New York. It covers nine passenger elevators and amounts to $69,800. Ten years ago the expenditure of this amount for such a purpose would have been considered a wasteful extravagance, but what was then regarded as a luxury has meanwhile become a necessity, and now an appropriation for elevators for every important building devoted to business purposes is as much a matter of course as that for a roof. The same description of lifts (six in number) are fitted up in the Mills Building, New York, noticed recently in the *Builder*. The American Elevator Company of London are connected with Messrs. Otis Bros., of New York, as makers of the lifts or elevators in both buildings.

Royal Birmingham Society of Artists. Mr. L. Alma Tadema, R.A., has accepted the office of President of this Society, in succession to Mr. Millais, R.A. Mr. Claude Pratt has been elected an Associate of the society. The spring exhibition will be opened in Easter week.

Stonehaven Harbour.—At a recent meeting of the Board of Harbour Trustees of this port, a report relative to the harbour, made by Messrs. T. & D. Stevenson, Engineers to the Fishery Board for Scotland, with a request by that Board for the observations of the trustees thereon, was read. After referring to the extent and condition of the present harbour, the report states that it is somewhat surprising that for so long a period as about fifty years the undoubtedly great capabilities of this bay for harbour extension should not have been taken advantage of and turned to account for the encouragement of the fishings and the general trade. It concludes by recommending the erection of a breakwater, which would project into deeper water than exists at the present entrance; and though it would not have the effect of making the present harbour in any sense a harbour of refuge, it would be of such a nature as to produce a great improvement at a cost, say of 20,000*l*. to 30,000*l*.

Rival Cities.—On the 12th inst. Mr. W. Landless, architect, read a paper on "The Rival Cities,—Edinburgh and Glasgow," before a meeting of the architectural section of the Glasgow Philosophical Society. Having stated the comparative areas of the two cities, he mentioned that the population to the acre was fifty-one in Edinburgh and eighty-six in Glasgow. During the past ten years the average death-rate of Edinburgh had been 23 per 1,000 per annum, and that of Glasgow 28. The climate and situation of the respective cities having been referred to, the lecturer spoke of their architectural features, and advocated a statutory classification of properties similar to that of ships. The president, Mr. J. Sellars, thought that the movement for the classification of buildings might be revived with great advantage.

Royal School of Art Needlework.—Some fine specimens of ornamental needlework done by ladies studying or engaged at this school may be seen during the next few days at the showrooms of the institution in the Exhibition-road, near the Albert Hall. The most elaborate of these is a hall *portière*, worked for the Duke of Bedford. Another large piece of work, from one of the Scottish branches of the school, is a pair of curtains worked for Lady Eglinton. Several very handsome curtain sets also have been made for General Whittier, of Boston.

Water Engineer's Office, Liverpool.—At the meeting of the Liverpool City Council on the 14th inst., on the recommendation of the Water Committee, Mr. James Jennings Campbell was appointed superintendent of the water engineer's drawing office, in the place of Mr. Joshua Nunn, resigned, at a salary of 225*l*. per annum, the engagement to be determinable by one calendar month's notice, and to be subject to the superannuation provisions of the Liverpool Improvement Act, 1882.

Leeds Architectural Society.—Mr. W. H. Thorpe, of Leeds, read a paper on "Recollections of Flemish Architecture" before the members of the Leeds Architectural Society, in the Society's Lecture-hall, Albion-street. Mr. J. B. Fraser, the president, occupied the chair. A vote of thanks to the lecturer was adopted on the motion of Mr. Ambler, seconded by Mr. Tweedale. The officers for the ensuing session were afterwards elected.

Naworth Castle.—Messrs. Burt & Potts state that they supplied their patent watertight casements to all the windows in the new addition to the above castle. They are also supplying all the casements for Mr. T. Hartley, Armathwaite Hall, near Cockermouth, which is being built under the same architect, Mr. C. J. Ferguson.

Precinct of the Savoy.—Her Majesty the Queen has ordered the erection of new schools for the Precinct of the Savoy, and the works have been commenced by Mr. William Brass, contractor, of Old-street, St. Luke's, from the designs of Messrs. Perry & Reed, of the Adelphi. It is expected that the Duchess of Albany will lay the foundation-stone for the Queen.

Parkeston, near Harwich.—We are asked to mention that the slating here was done by Messrs. Ashton & Green, which firm also manufactured the lavatories, urinals, stoves, chimney-pieces, and marble work for the hotel and refreshment-rooms.

The Female School of Art.—The Queen has been pleased to purchase the four fans which obtained the Baroness Burdett Coutts's prizes for designs distributed by the Princess Beatrice on the 10th inst.

Damages against a Railway Contractor At the Croydon County Court, last week, an engine-driver, named Doughty, recovered his full claim of 253*l*. 10s. from Mr. Firbank, contractor for the new Croydon and Oxted line, for the loss of his sight in a collision between two trains, which occurred in the Riddlesdown tunnel on August the 1st last. The judge held that the accident occurred through insufficient regulations and the gross neglect of the driver of another engine.

TENDERS.

For a new road, surface water drain, gullies, &c., for the British Land Company (Limited), on their estate at Manor Park, Essex. Mr. H. B. Michell, surveyor:—

Peill & Son, Bromley, Kent	£648 0 0
Dunmore, Hornsey	600 0 0
Bloomfield, Tottenham	599 0 0
Wilson, Walthamstow	598 0 0
Keeble, Regent's Park	590 0 0
Harris, Camberwell	580 0 0
Pizzey, Hornsey	565 0 0
Jackson, Leyton (accepted)	488 0 0

For interior renovation of Trinity Church, Arundel, Sussex. Mr. E. J. Hamilton, architect, Brighton. No quantities:—

Lockyer, Brighton	£697 1 3
A. Smith, Bognor	480 0 0
S. Norman, Burgess-hill	432 15 0
Snewin, Littlehampton (accepted)	368 10 0

For alterations and additions to Northern District Boys' School, St. John's Common, Sussex, for the Clayton and Keymer School Board. Mr. E. J. Hamilton, architect. No quantities:—

Kent, Hayward's Heath	£335 0 0
F. Parsons, Brighton	320 0 0
Woolgar & Son, Horsham	256 15 0
Downer, Burgess-hill	240 0 0
S. Norman, Burgess-hill (accepted)	225 0 0
Scutt, Brighton (withdrawn)	177 10 0

For alterations and additions to roofs of 27 and 29, Westbourne-grove, Bayswater, for Messrs. Evans & Fisher:—

R. Smith, Pickering-place (accepted).

For eight villa-residences in Birdhurst-road and Birdhurst Rise, South Croydon, for Mr. J. Kendall. Mr. Edward C. Homer, architect, Mansion House Chambers:—

A. Waterman (accepted)	£11,600 0 0

For bringing out shop-fronts of four shops at Whittington-terrace, Forest Hill, for Mr. H. C. Morris. Mr. J. Slater, architect:—

T. Watson, Dulwich	£881 0 0
Roberts	771 0 0

For repairs, 3 and 4, Vere-street:—

Bamford	£177 10 0
Riley Bros.	163 10 0
Hornett	155 9 0
Waller	142 12 0

*** The list sent to us last week was erroneous.

For new stabling, Temple-street, Hackney:—

J. Smith	£1,150 0 0
Steele Bros.	1,090 0 0
B. Smith, Downham-road	1,045 0 0
Wire	990 0 0
Thomerson & Son	970 0 0
B. T. Wood	895 0 0
Hughes	878 0 0
Hawkings	872 0 0

Accepted for altering three houses and shops, and building a warehouse, Kirkgate, Wakefield. Mr. William Watson, architect:—

Squires (carpenter and joiner's work)	£275 10 0
Bagnall Bros. (excavating, brick, and stonework)	218 0 0
Wild (plumbing, glazing, & ironwork)	117 10 0
Rycroft (slating)	45 5 0
Turner (painting)	19 10 0
Tattersall (plastering)	15 3 7

Accepted for rebuilding stabling at St. John's, Wakefield. Mr. William Watson, architect:—

Summers (excavating, brick, and stonework)	£147 0 0
Loyd (carpenter and joiner's work)	66 8 6
Kirk (plumbing, glazing, & ironwork)	34 5 0
Rycroft (slating)	16 10 0
Lockwood (painting)	6 14 6
Driver (plastering)	6 5 6

For making roads and drains on land adjoining Jacob's Well-lane, Wakefield. Mr. William Watson, architect:—

Tattersall	£633 18 3
Vale	604 14 0
Hartley	558 19 3
Summers	447 0 0
Wilson	444 6 5
Flower Bros.	425 0 0
Fawcett	424 0 0
Storr	381 0 0
Bagnall Bros. (accepted)	287 0 0

For kerbing and making up North-street, Bromley, Kent, for the Bromley Local Board. Mr. Hugh S. Cregeen, surveyor:—

Davis & Attwood	£415 10 0
E. Peill & Sons	297 0 0
T. Lansbury	287 10 0

For billiard-rooms and additions to the West Kent and Greenwich Carlton Club, Point House, Blackheath. Mr. A. L. Guy, architect. Quantities supplied:—

		Wood Ceiling and Lincrusta Dado.
Hatfield	£930 0 0	£60 0 0
Redman	897 0 0	95 0 0
Kennard Bros.	892 0 0	29 0 0
Jerrard	887 0 0	68 0 0

For receiving-house and casual wards, Wallis's-yard, Buckingham Palace-road, for the St. George's Union. Messrs. H. Saxon Snell & Sons, architects:—

Staines & Son	£22,970	0	0
Bolding	22,787	0	0
Nightingale	21,870	0	0
Garlick	21,800	0	0
Wall Bros.	21,255	0	0
Parker	21,000	0	0
Adcock	21,000	0	0
Lucas & Son	20,990	0	0
Mowlem & Co. (accepted)	20,900	0	0
Peto Bros.	20,379	0	0

For pulling down and rebuilding 32, Broadway, Westminster, for Mr. Cohen. Mr. H. W. Budd, architect:—

Hoare & Son	£1,281	0	0
King & Son	1,250	0	0
Pink & Co.	1,230	0	0
Lamble (accepted)	1,148	0	0

For goods warehouse for the Dover Harbour Board. Mr. Rowland Rees, architect:—

Martin, Wells, & Co., Aldershot	£2,538	0	0
T. Bourne, Dover	2,483	0	0
W. Hill & Co., London	2,480	0	0
W. Wiles, Dover	2,450	0	0
A. Mathews, Dover	2,415	0	0
Hayward & Paramor, Folkestone	2,370	0	0
H. Stiff, Dover	2,287	0	0
W. J. Adcock, Dover (accepted)	2,285	0	0
H. Richardson, Dover	2,230	0	0
H. Whelch, Dover	2,155	0	0

For stabling, &c., the Queen's Hotel, Upper Norwood. Mr. J. Randall Vining, architect. Quantities by Mr. F. Rogers:—

Thomas Crossley, Bromley	£2,967	0	0
S. J. Jerrard, Lewisham	2,679	0	0
T. H. Adamson & Sons, Ealing	2,641	0	0
John Mowlem & Co., Milbank	2,580	0	0
Geo. Amer, Catford	2,480	0	0
Killby & Gayford, Finsbury	2,436	0	0
R. H. Jenkin, Norwood	2,432	0	0
W. Johnson, Wandsworth	2,430	0	0
H. Burman & Sons, Kennington	2,400	0	0
G. Masters, Anerley	2,400	0	0
J. & C. Bowyer, Norwood	2,389	0	0
J. F. Sargeant, Hackney (accepted)	2,378	0	0

For additional premises to 8, High-street, Croydon, for Messrs. Grant Bros. Mr. Robert Ridge, architect:—

Smith & Bulled	£1,295	0	0
Smith & Son	1,219	0	0
Marriage	1,210	0	0
Legg	1,194	0	0
Pearson	1,193	0	0
Pollard	1,190	0	0
Maides & Harper	1,137	0	0
Loe & Son	1,120	0	0

For painting and decorations of the officers' mess-room, billiard smoke-room, and reception-rooms, for the Officers of the Royal Artillery, Shoeburyness, Essex:—
G. W. Stewart, Chapter-road, Walworth (accepted).

For alterations and additions at Tierney Arms, Edward-street, Brighton, for Mr. James Whiffen. Mr. Geo. Treacher, architect:—

John Beale (accepted)	£368	0	0

For new fittings, counter, and stillion at the King's Head Tavern, Wandsworth-road, for Mr. J. C. Scott. Mr. Geo. Treacher, architect:—

John Beale (accepted)	£432	0	0

For new fittings, &c., at the Burlington Arms Tavern, Old Burlington-street, for Mr. J. H. Docker. Mr. Geo. Treacher, architect:—

John Beale (accepted)	£290	0	0

For new counter, lobbies, and fittings at the Yorkshire Grey Tavern, Langham-street, for Mr. T. Maguire. Mr. Geo. Treacher, architect:—

John Beale (accepted)	£562	0	0

For alterations and additions, fittings, painting, and decorating the Tower Tavern, Westminster Bridge-road, for Mr. Robert Day. Mr. Geo. Treacher, architect:—

John Beale (accepted)	£584	0	0

For alterations and additions at 27, Panton-street, Haymarket, for Mr. Thurston. Mr. J. T. Wimperis, architect. Quantities by Mr. Morris Evans:—

Hatfield & Son	£398	0	0
T. & T. Bush	323	0	0
John Beale	299	0	0
Drake	253	4	0

For the erection of a warehouse in the Gray's Inn-road, for Mr. F. Sage. Mr. A. Bedboreugh, architect. Quantities supplied by Messrs. R. L. Curtis & Sons:—

	Warehouse.	Party Wall.	Old Materials.
Saul	£3,472 0	£154 6	£50 10
Martin, Wells, & Co.	2,825 0	86 0	11 0
Dearing & Son	2,800 0	95 0	10 0
Warr	2,574 0	102 0	7 0
Sabey & Son	2,498 0	142 0	50 0
Styles & Holdstock	2,356 0	99 0	30 0
Martin & Goddard	2,353 0	104 0	20 0
Hearle & Son	2,298 0	105 0	—
Abraham	2,297 0	103 0	—
Staines & Son	2,284 0	108 0	18 0
Howell & Son	2,245 0	95 0	20 0
Morter	2,207 0	104 0	25 0
Belham & Co.	2,199 0	100 0	20 0
Parrish & Hawker	2,193 0	99 0	20 0
Langmead & Way	2,079 0	90 0	10 0
Bolding	2,077 0	117 0	—
Bartlett	2,074 0	105 0	14 0
Sly	2,060 0	98 0	30 0
Brown & Co.	1,997 10	97 8/6	15 0
Aldridge & Jenvey	1,996 0	87 11	10 0
Higgs	1,952 0	105 0	7 0
Roberts	1,898 0	89 0	25 0
Ball	1,885 0	85 0	30 0
Parker	1,850 0	84 0	10 0

For the erection of cottage adjoining the Parish School, East Farndon, Northamptonshire. Mr. Herbert W. Chattaway, architect, Trinity Churchyard, Coventry:—

Adams, West Haddon	£225	10	0
Ball & Claypole, Broughton	195	0	0
Russell, East Farndon	190	0	0
Jennings, Market Harborough	179	15	0
Adkins, East Farndon (accepted)	176	10	0

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